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The Hall Effect in Bismuth at High Magnetic Fields and Low Temperatures.

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THE HALL EFFECT IN BISMUTH
AT HIGH MAGNETIC FIELDS AND LOW TEMPERATURES

A Thesis

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ABSTRACT

The low temperature Hall effect has been examined in a bismuth single crystal in fields up to 13.5 kilo-gauss. The phenomenon was studied in the temperature range 1.3°K to 4.2°K. Measurements were made with the magnetic field parallel to the trigonal axis, parallel to a binary axis, and perpendicular to the trigonal and a binary axes. By interchanging the function of the Hall voltage probes and the current probes, it was possible to obtain data at two probe orientations for each alignment of the field with respect to a crystalline axis.

Oscillations were found in the Hall voltages and in the calculated Hall coefficients at each of the three field orientations. The interchanging of the probes had no effect upon the periods, phases, or amplitudes of the oscillations. Although the amplitudes of the oscillations show a strong temperature dependence, their periods and phases are independent of this variable. With the field directed along the trigonal axis, the Hall coefficient contains a single oscillating term which is periodic in 1/H. The coefficient contains at least two and possibly more oscillating terms when the field is in the other orientations. The periods determined from data obtained with the field parallel to the trigonal axis and with the field parallel to a binary axis are in good agreement with

those found previously in the oscillatory Hall effect and magneto-resistance of bismuth. Attempts to fit the amplitude of the oscillations to a de Haas - van Alphen type formula were unsuccessful.

CHAPTER I

INTRODUCTION

An anomalous variation in the diamagnetic susceptibility of single crystals of bismuth at the temperatures of liquid hydrogen was discovered by de Haas and van Alphen[1]. This and later investigations at the lower temperatures of liquid helium showed that the susceptibility is a quasi-periodic function of $1/H$[2,3]. Although the period is independent of temperature, it is strongly dependent upon the orientation of the magnetic field with respect to the crystalline axes. No fluctuations in the susceptibility are observed when the field is parallel to the trigonal axis. At other orientations, the effect differs in details such as the periodicity and the number of oscillating terms. The oscillations increase in amplitude as the field increases and as the temperature decreases.

A theory of this phenomenon, based upon a free electron

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[1] W. J. de Haas and P. M. van Alphen, Leiden Comm., No. 212 (1930) and No. 220d (1932).

[2] D. Shoenberg, Proc. Roy. Soc. (London), A 170, 341 (1939).

[3] D. Shoenberg, Trans. Roy. Soc. (London), A 245, 1 (1952).

model, was developed by Peierls[4], Blackman[5], and Landau[6]. It was later modified and extended by a number of others including Rumer[7], Sondheimer and Wilson[8], Akheiser[9], Dingle[10], and Robinson[11]. By this theory, the diamagnetic susceptibility is determined from the thermodynamic free energy of an electron gas. The susceptibility is given by the relation:

$$\chi = -\frac{1}{H}\frac{\partial F}{\partial H}.$$

Here, F is the Helmholtz free energy of an electron gas in a magnetic field. Appropriate corrections and approximations are made to relate this to the free energy of con-

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[4] R. Peierls, Z. Physik, 80, 763 (1933) and 81, 186 (1933).

[5] M. Blackman, Proc. Roy. Soc., A 166, 1 (1938).

[6] L. Landau, see Appendix to reference 2.

[7] Y. B. Rumer, J. Exptl. Theor. Phys., U.S.S.R., 18, 1081 (1948).

[8] E. H. Sondheimer and A. H. Wilson, Proc. Roy. Soc., A 210, 173 (1951).

[9] A. Akheiser, Compt. Rendus Acad. Sci., U.S.S.R., 23, 874 (1939).

[10] R. B. Dingle, Proc. Roy. Soc., A 211, 500 (1952); Proc. Roy. Soc., A 211, 517 (1952); and Proc. Roy. Soc., A 212, 47 (1952).

[11] J. E. Robinson, Thesis, Yale University, Unpublished (1950).

duction electrons in a metallic single crystal.

Shoenberg and others have found that experiment upholds this theory fairly well. Furthermore, the theory is general enough to indicate the possibility that the diamagnetic susceptibilities of certain other elements might behave in a similar manner. Thus far, this has been found to be true in fifteen single crystals. Among these are crystals of the elements: tin[12], zinc[13], beryllium[14], cadmium[15,16], aluminum[17], lead[18], antimony[19], arsenic[3], and graphite[20]. It is possible that the effect is present in a number of other metals but cannot be detected because the periods and amplitudes of their oscillating susceptibilities are too small[3].

The assumption that it is the behavior of the conduction electrons of these metals in the presence of a

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[12] D. Shoenberg, Nature, 164, 225 (1939).

[13] J. A. Marcus, Phys. Rev., 71, 559 (1947).

[14] Verkin, Lazarev, and Rudenko, Doklady Akad. Nauk., U.S.S.R., 73, 59 (1950).

[15] Verkin, Lazarev, and Rudenko, J. Exptl. Theoret. Phys., U.S.S.R., 20, 93 (1950).

[16] D. Shoenberg, Nature, 166, 652 (1950).

[17] D. Shoenberg, Nature, 167, 647 (1951).

[18] D. Shoenberg, Nature, 170, 569 (1952).

[19] T. G. Berlincourt, Phys. Rev., 92, 1069 (1953).

[20] T. G. Berlincourt, Phys. Rev., 98, 956 (1955).

magnetic field which gives rise to this phenomenon suggests the appearance of similar oscillations in some of the other electronic processes. It was, in fact, the observation of an anomalous magneto-resistance in bismuth by de Haas and Schubnikow[21] that led de Haas and van Alphen to their discovery. A search for oscillatory galvano-magnetic and thermo-magnetic phenomena in a number of the de Haas - van Alphen metals has shown that in several instances they do indeed exist.

The anomalies found earlier by Schubnikow and de Haas in the magneto-resistance of bismuth were re-examined by de Haas, Blom, and Schubnikow[22]. More recently, this property was investigated in great detail by Alers and Webber[23]. Berlincourt's[24] measurements of the de Haas - van Alphen effect in the same crystal used by Alers and Webber established a previously noted correlation in the oscillations of the two effects. Further correlations were found in the periodicity of the oscillations in the diamagnetic susceptibility and magneto-resistance of

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[21] L. W. Schubnikow and W. J. de Haas, Proc. Acad. Sci. Amsterdam, 33, 130, 363, and 418 (1930).

[22] W. H. de Haas, J. W. Blom, and L. W. Schubnikow, Leiden Comm., 237 (1935).

[23] P. B. Alers and R. T. Webber, Phys. Rev., 91, 1060 (1953).

[24] T. G. Berlincourt, Phys. Rev., 91, 1277 (1953).

zinc[25,26] and graphite[25] single crystals.

De Haas and Gerritsen[27] reported that the Hall effect in bismuth possibly oscillated at low temperatures, recently, this was definitely established by Reynolds, Leinhardt, and Hemstreet[28]. Berlincourt[25] also found an oscillatory Hall effect in a graphite crystal. Steele and Babiskin[29] discovered a similar oscillatory magnetic field dependence in both the thermoelectric power and thermal conductivity of bismuth. It has been found that the period of at least one oscillating term is common to all of these different phenomena.

This investigation was undertaken to study further the oscillatory Hall effect in a cubical single crystal of bismuth. Measurements were made at seven different temperatures in the range 4.2°K to 1.3°K and for three orientations of the crystal with respect to the magnetic field. Moderately high fields, up to 13.5 kilo-gauss,

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[25] T. G. Berlincourt and J. K. Logan, Phys. Rev., 93, 348 (1954).

[26] N. M. Nachimovich, J. Phys., U.S.S.R., 6, 111 (1942).

[27] A. H. Gerritsen and W. J. de Haas, Leiden Comm., 216b (1940).

[28] J. M. Reynolds, T. E. Leinhardt, and H. W. Hemstreet, Phys. Rev., 93, 247 (1954).

[29] M. C. Steele and J. Babiskin, Phys. Rev., 98, 359 (1955).

were used. A description of the experiment, tables of data and calculations, a number of graphs and other illustrations, and a discussion of the Hall coefficient are presented in the following pages.

CHAPTER II

APPARATUS

The crystal used in this investigation was prepared by Reynolds and Hemstreet from spectroscopically pure bismuth purchased from Johnson, Matthey, and Company, Ltd., London. Molten bismuth was allowed to crystallize slowly in an evacuated Bridgeman-type glass mold. The resulting crystal was cylindrical in shape. An examination of its etched surface and some careful cleaving at liquid nitrogen temperatures indicated that the cylinder was a single crystal. Hemstreet, using a water-cooled carborundum cutting wheel, shaped a selected section of this cylinder into a nearly cubical form. It was cut so that two of its faces are perpendicular to the trigonal axis; two other faces are perpendicular to a binary axis; and the third pair of faces is parallel to the plane formed by this binary axis and the trigonal axis.

The dimensions of the crystal in its final form were 6.7 x 5.2 x 5.2 mm. Repeated etchings and some additional cutting have, however, reduced its size. This additional cutting was required to remove the deep pits and grooves left in the sides of the crystal by probes used in making previous Hall measurements. At the conclusion of this investigation, its dimensions were 5.6 x 4.2 x 4.2 mm.

The successful performance of this study depended to a great extent upon the careful selection, design, and assembly of certain apparatus. It was essential, for instance, that there be available a cryostat capable of keeping the crystal at the temperatures of liquid helium for considerable lengths of time. A crystal holder was needed to maintain the crystal in a predetermined orientation while providing good electrical contact and allowing for expansion or contraction. Provision had to be made for the accurate and rapid measurement of Hall voltages and currents. It was also necessary to have an electromagnet which could furnish reasonably steady fields over a considerable range of values for long periods of time. A description of the apparatus which more or less met these requirements follows.

Figure One is a diagram of the cryostat and crystal holder. The cryostat consisted of two Dewar flasks, one inside the other. Liquid helium was contained in an inner flask (A). To reduce the temperature gradient between the walls of the helium flask, an outer flask (B) was filled with liquid nitrogen. The two flasks are of similar design, their lower ends being slender, double-walled glass tubes. This permitted the use of a narrow air gap between the pole pieces of the electromagnet.

The flask containing helium was covered by a brass cap (C). A threaded brass ring (D) and a pair of "O" - rings firmly held the cap in place. A vacuum-tight fit

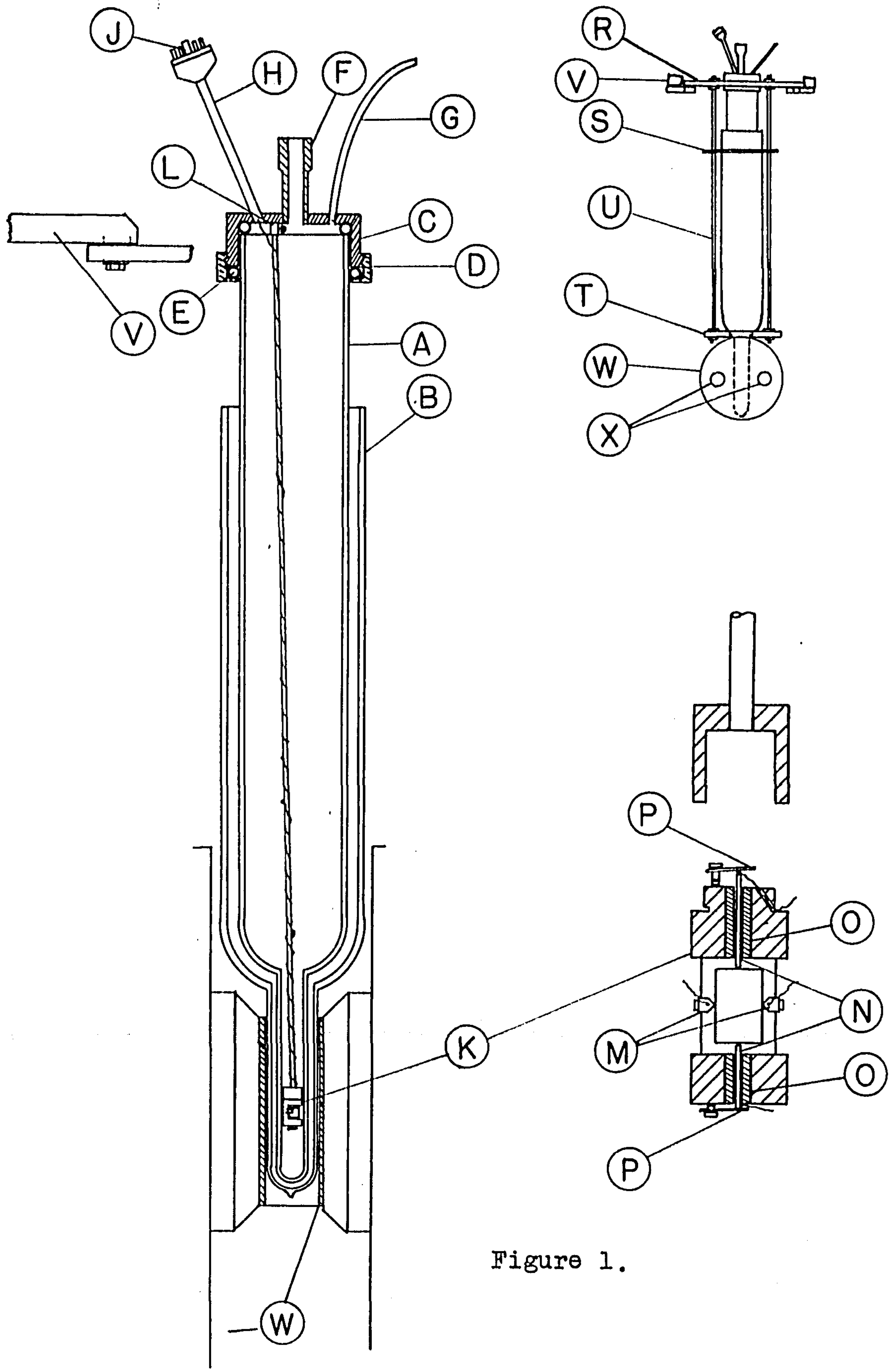

Figure 1.

was provided by one of the "O" - rings (E). The other helped to protect the upper rim of the flask from mechanical shock. On to the upper part of the cap there were soldered a flue (F), a copper tube (G), and a stainless steel tube (H). During an experimental run, a thick-walled rubber hose connected the flue to a high pumping rate mechanical vacuum pump. A section of the hose was constricted between the jaws of a hand vise. The size of this constriction determined the rate at which the helium vapor was removed from the inner flask. In this way the pressure of the vapor above the liquid helium was regulated. Vapor pressures were measured with a mercury vacuum gauge connected by a rubber hose to the copper tube (G). An oil manometer containing Octoil "S" measured very low pressures. By referring the measured vapor pressures to a set of vapor pressure tables, it was possible to determine the temperature of the liquid helium. The Mond[30] Tables were used.

To minimize the thermal emf's usually found in cryostat cap electrodes, all of the wire leads coming from the crystal probes were directed through a six inch stainless steel tube to an octal socket (J). The temperature gradient across the socket electrodes was not great enough to

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[30]H. van Dijk and D. Shoenberg, Nature, 164, 151 (1949).

develop large thermal currents. "Pyrex" brand glass wool, packed around the leads in the tube reduced thermal convection currents.

A crystal holder (K) was suspended by a 1/8 inch lucite rod from a small brass bushing (L) soldered to the underside of the flask cap. A small screw in the side of the bushing helped to prevent the rod from slipping or turning. The length of the rod was adjusted so that it kept the crystal holder and hence the crystal within the most homogeneous region of the magnetic field.

The crystal holder, about 1-1/4 inches long, was machined from lucite. It was made to fit snugly within the 1/2 inch inner tube of the helium flask. A pair of adjustable probes (M), cut from thin gauge phospher bronze sheet, was mounted with No. 80 machine screws onto the sides of the holder. The other pair of probes (N) was made of phospher bronze wire. These were fitted to a pair of brass bushings (O) set with some precision on the axis of the holder. Two phospher bronze springs (P) were attached to the holder to apply enough pressure on the wire needles to keep them in good contact with the surfaces of the crystal. The lower end of the lucite rod was glued to the crystal holder cap with coil dope.

Number 38 B. and S. Gauge, Formvar coated, copper wire leads were soldered to the probes. The two leads of each set of conductors, after being well coated with coil dope, were twisted together to make them non-inductive. They were then wound around the lucite rod and directed up through the stainless steel tube. The leads were soldered to the inner electrodes of the octal socket (J). At room temperatures, the resistance of each of these leads was found to be 1.2 ohms.

A brass bar (R) was attached to the flask cap. Two 1/8 inch brass rods (U) with threaded ends were suspended from this bar to a lucite form (T). A lucite spacer (S) and the form (T) helped to keep the outer flask in proper alignment. Four hexagonal nuts on the ends of each of the rods (U) were tightened to keep the whole assembly rigid. It was highly important that, after alignment, this assembly could be removed from the magnet and later returned to its original position. This requirement was met by a rigid, angle bar bracket (V) mounted on the magnet yoke. The flask cap bar (R) was bolted to a pair of adjustable aluminum rods on this bracket. A lucite form (W) helped to align the lower end of the cryostat. Two brass spacers were embedded in this form and a hole large enough to accommodate the smaller section of the cryostat was drilled along a diameter. The form (W) was mounted between the pole pieces of the magnet.

To facilitate a rapid acquisition of large quantities of data, a Leeds and Northrup recording potentiometer was used to measure Hall voltages. This device was adjusted to have a full scale deflection of 5 milli-volts. It was calibrated against a White double potentiometer by measuring with each in turn a potential developed across a standard resistor. Appendix I is a table of calibration data. It was found that each recorded potential had to be corrected by the addition of 0.07 milli-volt. The error in the readings, considering the White potentiometer to be correct, is probably less than 0.05 milli-volt, plus or minus. Previous experience has demonstrated that the variation in Hall current due to magneto-resistance is negligible in view of the other experimental errors. Hence, the Hall current was not automatically recorded, but was monitored by a K-3 Leeds and Northrup potentiometer. Figure Two is a schematic diagram of the circuits used to record the Hall voltages and currents.

The apparatus was designed so that the function of the probes could be interchanged. This made it possible to obtain two sets of data for each field orientation. Thus, for a particular orientation of the magnetic field with respect to an axis of the crystal, the probes, M, connected to the Leeds and Northrup recording potentiometer by the leads, 2-black and 4-red, measured the Hall voltages. The numbers refer to the octal socket electrodes and the colors refer to the leads of a four conductor, twisted cable. The probes, N, were connected to the current supply by the leads, 6-green and 8-white. The

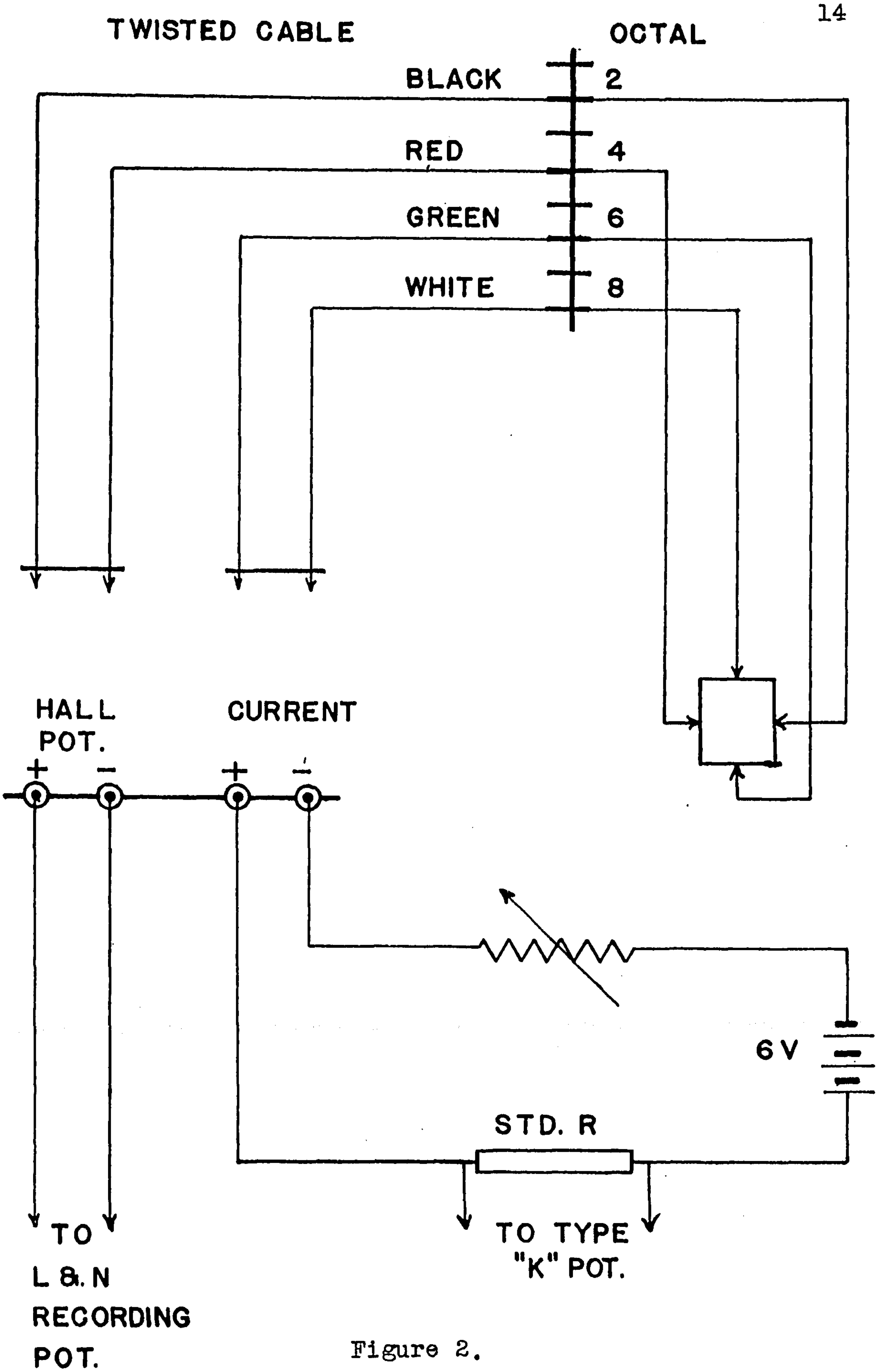

TWISTED CABLE
OCTAL
BLACK
2
RED
4
GREEN
6
WHITE
8
HALL
POT.
CURRENT
+
−
+
−
6 V
STD. R
TO
L & N
RECORDING
POT.
TO TYPE
"K" POT.

Figure 2.

K-3 potentiometer monitored the voltage (and, thus, the current) across a one ohm standard resistor. After a set of data had been recorded for this orientation, the probes, M, were connected to the current supply and the probes, N, to the recording potentiometer. A second set of data was then recorded.

Figure Three is a diagram of the electromagnet. The yoke of this magnet was taken from a General Electric impulse magnetizer. A set of eight coils (A) and six cooling plates (B) were built for it. Each of the coils was wound on a coil form (C) having an inner diameter of 5 inches, an outer diameter of 5-1/4 inches, and a width of 7/8 inch. The forms were cut from Phenolite tubing (Nat. XX-24) supplied by the National Vulcanized Fibre Company. A shallow one inch slot was cut on the outside of each coil form to receive a 45° flat fold in the conductor strip. Another fold, around the inner rim of the finished coil, permitted this lead to be brought out along a radius of the coil to a point where it could easily be connected to the other coils. About 120 turns of one inch by 0.015 inch, high electrical conductivity copper strip (D) was lathe-wound on each coil form. Insulation between the turns was provided by one inch by 0.005 inch "Peerless" Fish Paper (E). While being wound, the paper received a light coating of transformer varnish to help bind the windings together. To prevent uneveness, the coils

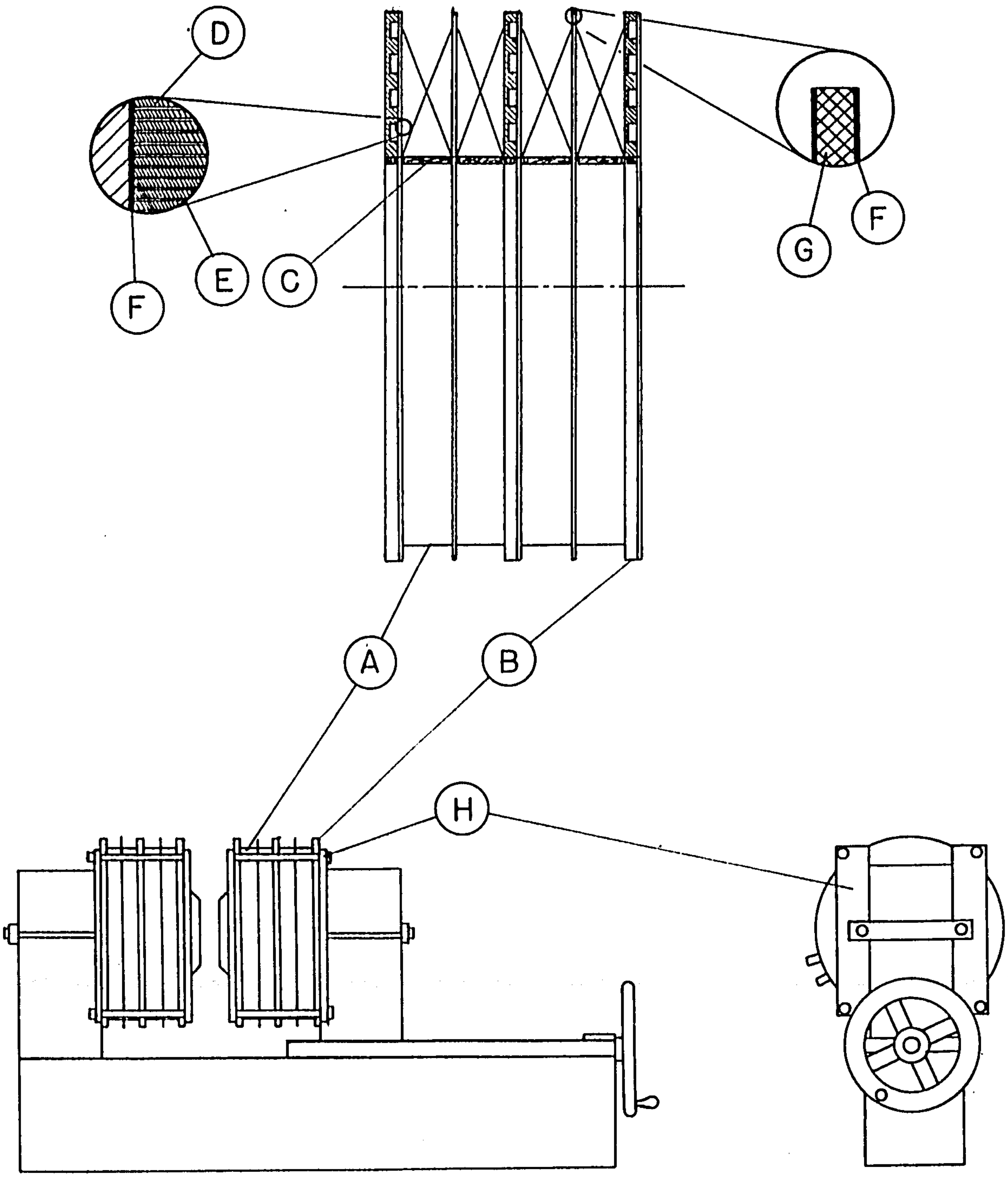
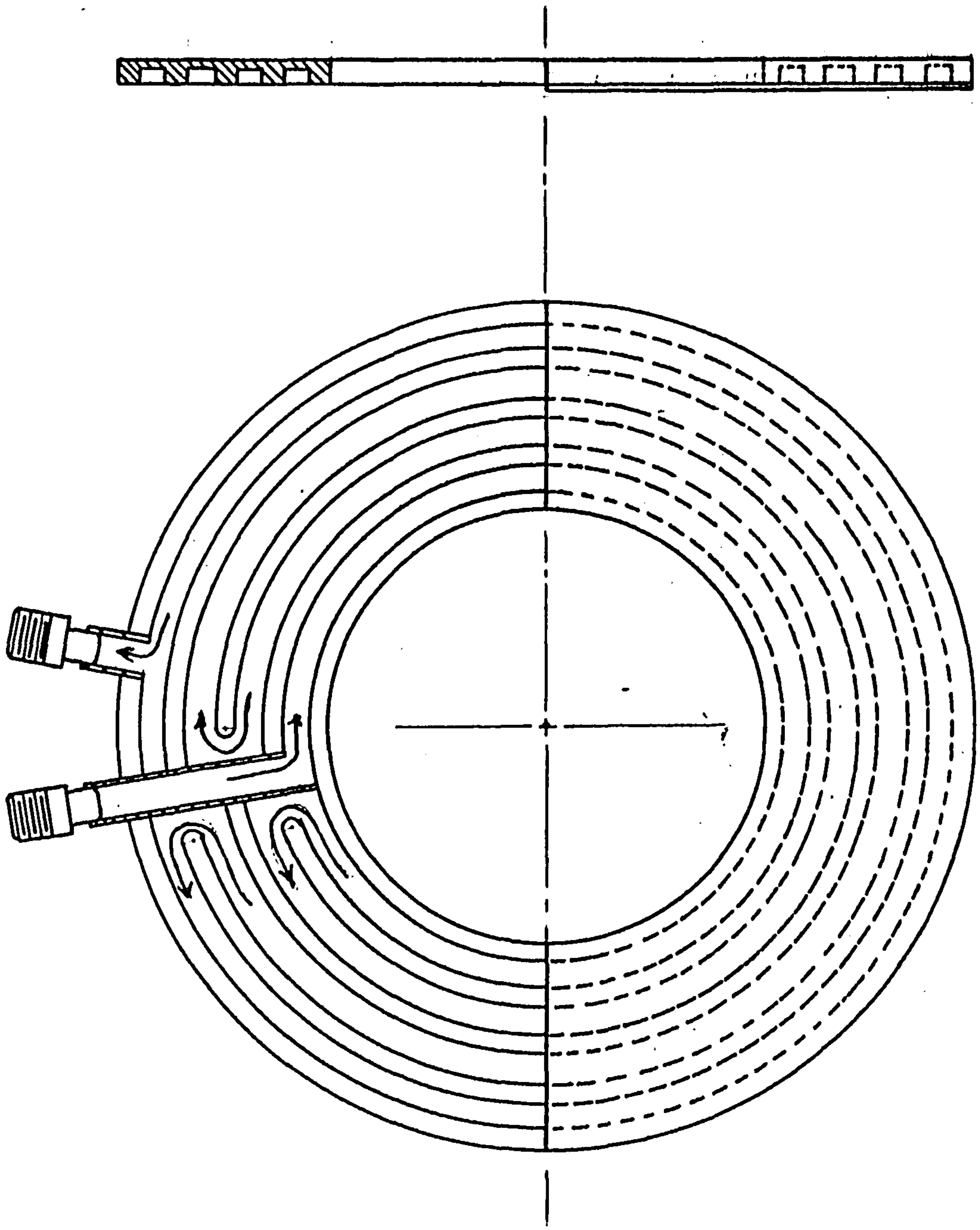


Figure 3.

were wound between heavy brass and lucite discs. An outer lead was provided by another 45° fold in a direction opposite to that of the inner fold. A copper strip was securely fastened around its outer circumference to hold the coil together. As an added precaution, a number of turns of heavy copper wire was wound and twisted about this strap. If the sides of a finished coil were found to be uneven, they were tapped even with a flat wooden block before the varnish binder dried. Excess varnish was carefully removed to make certain that the sides of the copper windings were bare.

The cooling plates, Figure Four, were made in the form of thin annular discs. A series of concentric grooves and radial slots were machined in six discs, each having an inner diameter of 5-1/4 inches, an outer diameter of 11-1/8 inches, and a thickness of 1/4 inch. Over each of these a 1/16 inch brass disc having the same diameters was soldered. Water, entering a 3/8 inch flare fitting mounted on the outer rim of each plate, flows along a radius toward the inner rim. It then circulates back and forth through the grooves to the outer rim where it is discharged through another 3/8 inch fitting.

The manner in which the coils and cooling plates are mounted on the five inch by five inch cylindrical pole pieces is shown in Figure Three. Insulation between the coils and the cooling plates is provided by Fiber Glass



COOLING PLATE

Figure 4.

Base Phenolite (Nat. G-5-813, also supplied by the National Vulcanized Fibre Company) sheets, 0.010 inch thick (F). This same material serves to insulate the coils from each other. However, to guide and space the copper lead strips from the inner parts of the coils, 1/16 inch mica sheets (G) are employed.

A set of brackets (H) are used to hold the plates and coils firmly together and to the magnet posts. These were tightened evenly while a high current was sent through the windings of the coils with no cooling. The heat generated by the coils melted some of the phenolite so that it flowed evenly about the bare sides of the copper windings and the cooling plates. In this way a fairly good thermal contact between the coils and the cooling plates was assured.

The coils, connected in series, have a total resistance of 1.1 ohms at 25°C. They are powered by a 125 volt, 15 kilo-watt, direct current generator. With a pole separation of 1-5/16 inch the magnet delivers about 13.5 kilogauss at 13 kilo-watts. Figure Five is a schematic diagram of the magnet circuit. Operating data and other pertinent information may be found in Appendix II.

In order to stabilize the field and to provide a smooth current control, a voltage regulator, Figure Six, was assembled. This was copied from a similar device originally designed by R. Beringer at Yale University. The magnet voltage is balanced against a potential

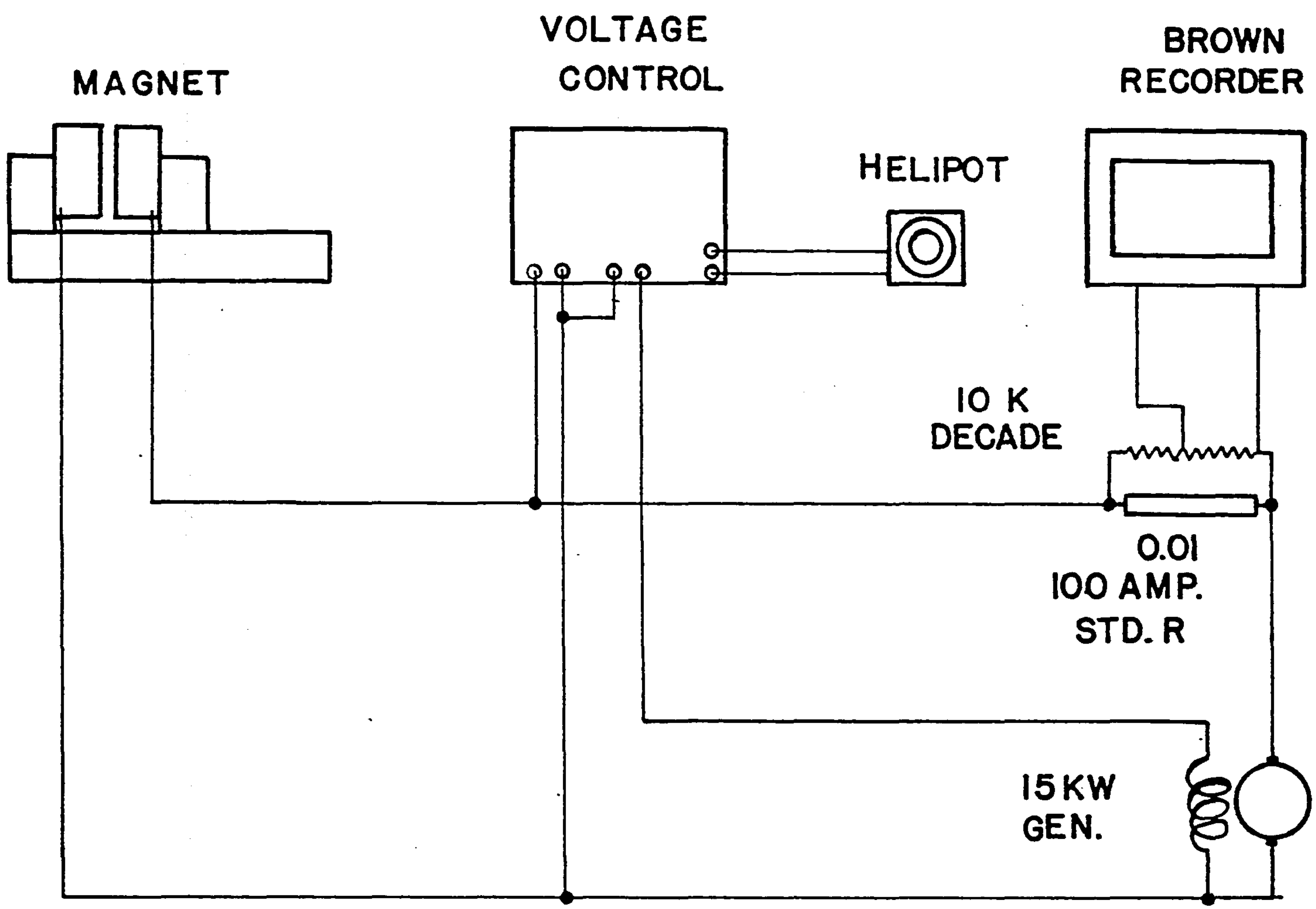

MAGNET
VOLTAGE CONTROL
HELIPOT
BROWN RECORDER
10 K DECADE
0.01
100 AMP.
STD. R
15 KW
GEN.

Figure 5.

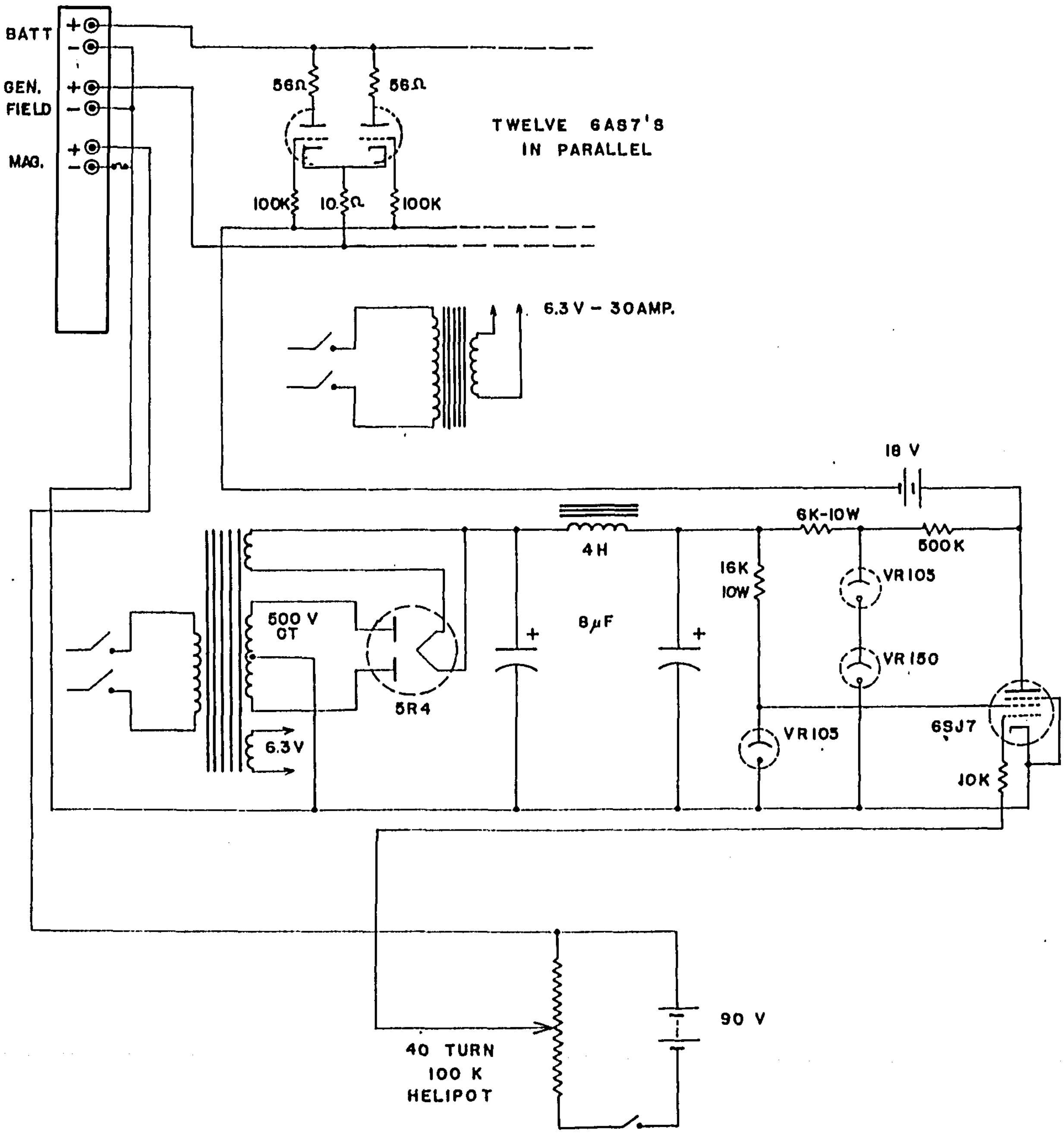

BATT
GEN.
FIELD
MAG.
56Ω
56Ω
TWELVE 6AS7'S
IN PARALLEL
100K
10Ω
100K
6.3 V – 30 AMP.
18 V
6K-10W
500 K
4 H
16K
10W
VR 105
500 V
CT
8 μF
VR 150
5R4
VR 105
6SJ7
6.3V
10K
90 V
40 TURN
100 K
HELIPOT

Figure 6.

developed across a 40 turn Helipot. Error signals control a gang of twelve parallel 6AS7's which supply the generator excitation current. This instrument successfully controls and steadies the magnetic field for values less than 10 kilo-gauss. Beyond this point, there is a noticeable periodic drift in the magnet current. This is probably a heating effect. The variation in current is about 0.5 ampere, but, since it occurs above the "knee" of the field curve, it introduces an error of hardly more than 100 gauss in this region.

A Brown Recorder, as shown in Figure Five, measured the magnetic field current. A 10,000 ohm decade box, shunted across the 0.01 ohm standard resistor in the power line, was used as a voltage divider. This potentiometer was adjusted so that the signal it supplied the Recorder caused a full scale deflection of 50 milli-volts while 100 amperes flowed through the coils of the magnet. The magnet was calibrated directly against the Brown Recorder measurements of the current. The conventional flip coil and ballistic galvanometer method was used.

CHAPTER III

PROCEDURE

Although one pair of the probes in contact with the crystal was more or less precisely set along an axis, it was necessary to adjust the other pair by trial and error. This was done with the crystal in position on the crystal holder. The adjustable probes were aligned optically along an axis that was perpendicular to and bisected the axis of the other two probes. As nearly as possible, the plane in which the axes of the probes lay was made parallel to the plane of a crystal face. Then the flask cap with its suspended holder and the crystal was mounted on the magnet bracket. The assembly was adjusted until a side of the crystal and, hence, the plane of the probes, was made parallel to the face of a pole piece of the magnet. This was done visually by sighting along the face of a machined block placed on either side of the crystal and in contact with the face of the pole piece. It is believed that the crystal axis was out of alignment by not more than a degree or so for each orientation.

After the crystal had been satisfactorily mounted, the cap was placed on the helium flask and it was tightened into position. The helium flask was then filled with liquid nitrogen and the whole assembly was fitted into place on the magnet. Electrical connections were made and a current of about 0.1 ampere was sent through the crystal. The magnet was then turned on and its field was raised until a fairly high Hall voltage was measured across the Hall probes. This potential was recorded and then the cryostat was removed from the bracket, rotated 180°, and remounted. The Hall leads were reversed at the potentiometer. The last step was necessary since a rotation of the crystal through 180° is the same as the reversal of the magnetic field. A change in the direction of the field brings about a change in the sign of the Hall voltage.

Another measurement was made with the field at the same value as before. If the difference between the readings was greater than one-half their average, the probes, after the crystal warmed up to room temperature, were realigned. The direction in which the probes had to be moved was indicated by the measurements. This process was repeated until the above requirements were met. The difference in the two readings represents an IR drop and indicates a slight displacement of the Hall probes from exact perpendicularity to the current probe axis. With each adjustment, the probe removed was etched to rid it of oxides. It was then cleaned with distilled water and dried before being placed in contact with the crystal surface. Usually it was necessary to reset only one probe. A slight indentation left in the crystal face served to guide its next alignment.

Once the crystal and its probes had been properly set, the cryostat was prepared to receive liquid helium. The flasks were cleaned and assembled. The flask cap was tightened down upon the "O"-rings which had been coated with silicone vacuum grease. Some of this grease was also applied to the flue and to the manometer tube to which were connected their respective vacuum hoses. A short length of vacuum hose was attached to the flue and it in turn was connected to the pump hose by a small brass tube. Clamping off the shorter tube before removing the pump hose prevented contamination of the helium container.

The helium flask was then evacuated and with the pump hose closed off, the apparatus was tested for leaks. This was done by observing the rate at which the mercury in the gauge rose. Most often, leaks were easily stopped by re-setting the various seals. If excessive leaking was not detected, dry helium gas was admitted to the system through a "T" connection in the manometer hose. The pressure inside the flask was allowed to rise to a point slightly above atmospheric pressure. Then, the system was re-evacuated and the filling process repeated. This was done several times to insure the removal of vapors and atmospheric gases. Finally, with the flask containing helium gas at some pressure slightly above that of the atmosphere, the outer flask was filled with liquid nitrogen.

As the inner flask cooled, helium gas was admitted to the system to compensate for the resulting decrease in pressure. When equilibrium had been reached, that is, after the gas inside the helium flask reached the temperature of liquid nitrogen, the small hose connected to the flue was clamped off and the pump hose removed. The manometer hose was removed from the "T" and its open end was plugged with a wad of "Pyrex" Brand fiber glass. Then the cryostat was removed from its bracket on the magnet and taken to the helium liquifier where it was filled with liquid helium. During this process, the leads were frequently checked for shorts and breaks. After being well charged with liquid helium, this apparatus was returned to its position on the magnet. Electrical connections were made and the process of data-taking begun.

Sometime prior to the actual run, the generator and the other electrical apparatus had been turned on so that they were all well "warmed up" by the time they were needed. Now, the valve admitting water to the cooling system of the magnet was opened. The motors driving the tapes in the recording potentiometers were started and the current source was adjusted to deliver a current of about 0.015 ampere to the crystal. The magnet switch was closed and its current was adjusted with the 40-turn Helipot in its control circuit. A slow, smooth field sweep was made to determine the general form of the Hall voltage curve. Plate I is a

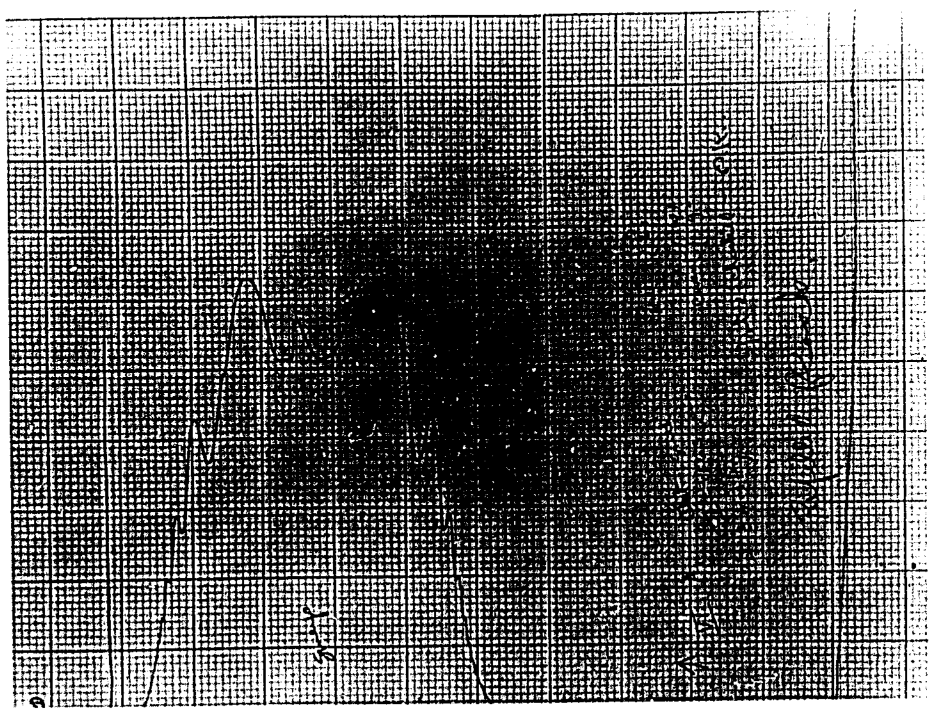


Plate I. A field sweep at 13 mm Hg. with the magnetic field parallel to the trigonal axis.

photograph of the recorder tape made during such a sweep. Then, the current was reduced to zero and increased again in small increments. After each increase in field current the system was allowed to reach equilibrium. This took about 30 seconds because of the large time constant of the magnet and its control circuit. As soon as the recording pens stopped moving, identifying numbers were written next to the inked lines on the two tapes. Plate II, a photograph of corresponding sections of the two tapes, illustrates this. The upper tape is a record of the field current, the lower is a record of the Hall voltage. Pressure and pressure variations, current and current variations, and other information were noted along side the recorded Hall voltages as often as necessary.

After the field had reached its highest value, the magnet current was decreased to zero, the cryostat was turned through 180°, and the Hall leads were reversed. A second set of data was then recorded in the manner indicated above. Upon the completion of this, the Hall and current leads were interchanged and the data taking procedure was repeated. Thus, at each temperature, four sets of data were obtained, two for each orientation of the Hall and current probes.

To obtain data at a lower temperature, the pump was turned on and, with a small constriction in the connecting hose, the pressure in the cryostat was gradually reduced

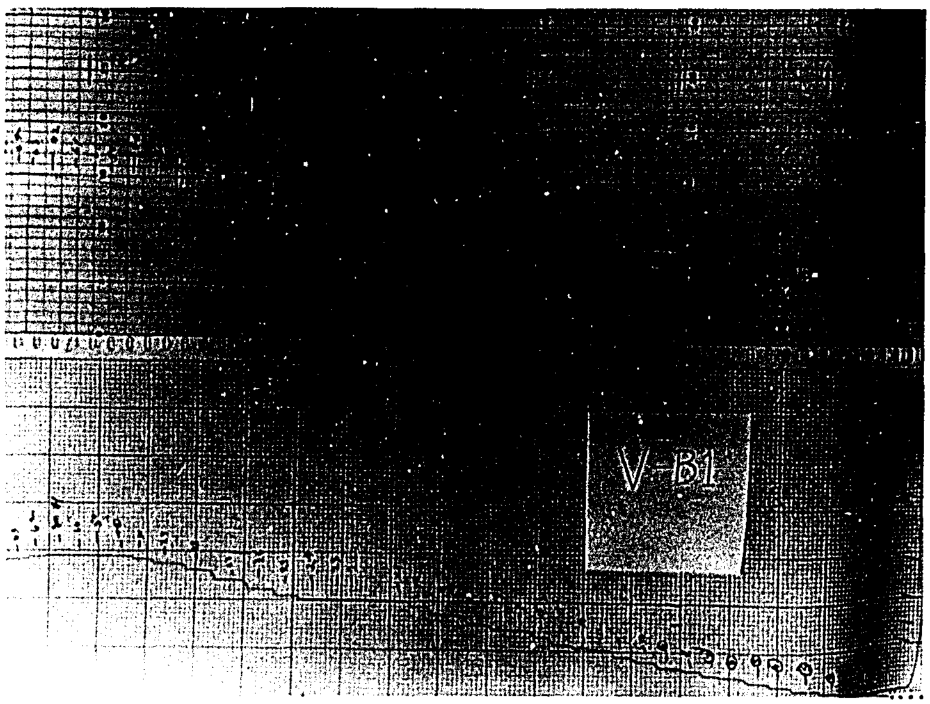


Plate II. Sections of the recorder tapes at 41 mm Hg. with the magnetic field parallel to the trigonal axis.

to a predetermined value. After the pressure had reached equilibrium, the procedure outlined above was followed. This was continued on down to the lowest temperature.

Once the data had been recorded for a given field orientation, the apparatus was allowed to warm up and the crystal was removed. It was etched and remounted on the holder with a different axis parallel to the direction of the magnetic field. Then, a new set of data was taken. This was done for three orientations of the field with respect to the cubical single crystal's axes.

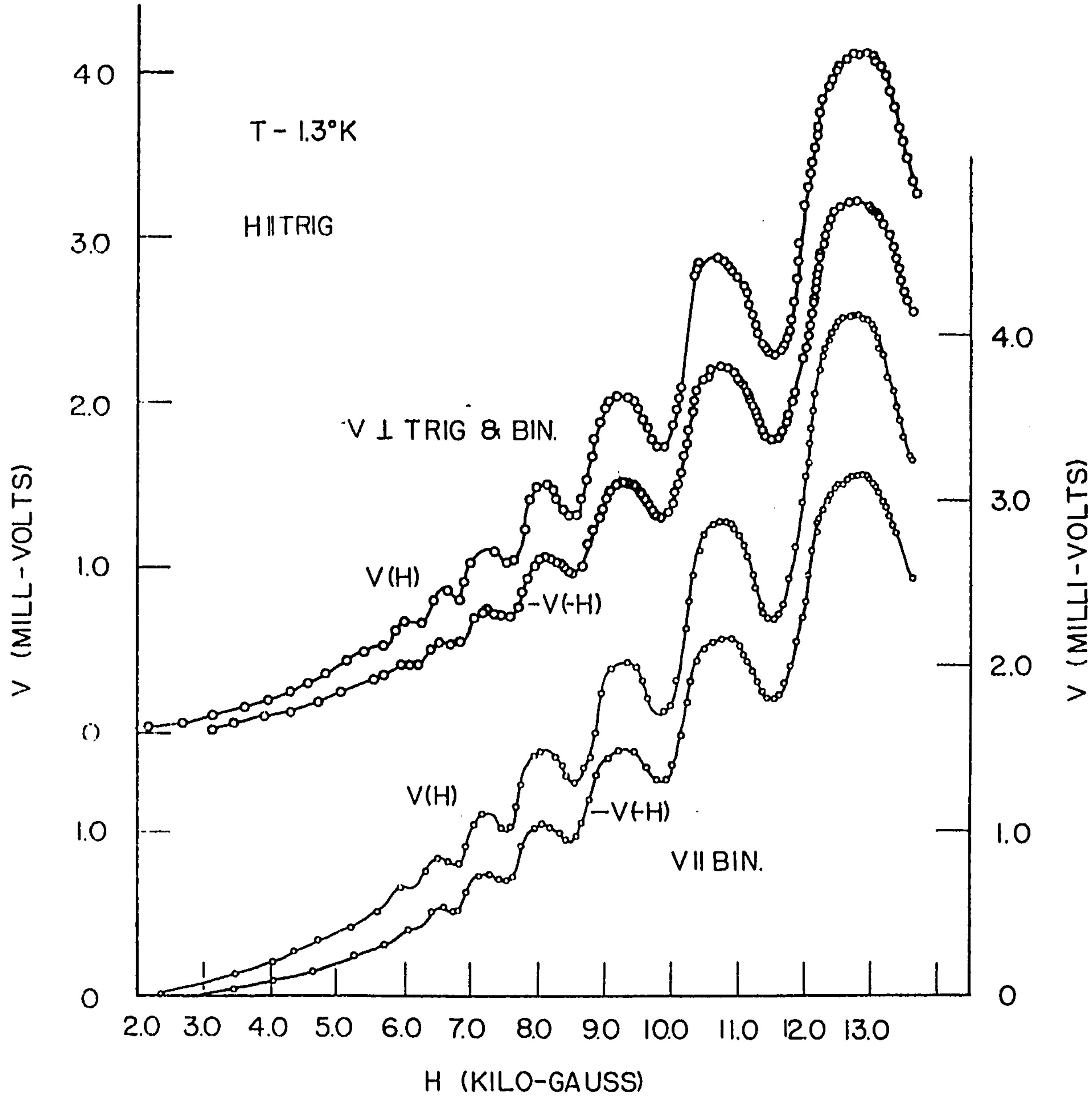
CHAPTER IV

TABULATION OF RECORDED DATA AND CALCULATION OF HALL COEFFICIENTS

The data recorded on the potentiometer tapes were translated into numerical values of Hall voltages and magnetic field strengths and were tabulated. Appendix III is a compilation of this data. Figures Seven through Thirteen are graphs made from the data recorded with the magnetic field parallel to the trigonal axis of the crystal. The two upper curves in each figure of this series were drawn from measurements made with the Hall probes perpendicular to the trigonal axis and to a binary axis. The current probes were parallel to this binary axis. The lower curves result from measurements made with the Hall and current probes interchanged.

The second series of graphs, Figures Fourteen through Twenty, are drawn from measurements made with the field parallel to a binary axis. For the upper curves the Hall probes were parallel to the trigonal axis and the axis of the current probes was perpendicular to the trigonal axis and this binary. Again the probes were interchanged to obtain the data plotted in the two lower curves.

Figures Twenty-one through Twenty-seven are graphs of the third and last series of measurements. For this set of data the magnetic field was directed along an axis perpen-



T - 1.3°K
H ‖ TRIG
V ⊥ TRIG & BIN.
V(H)
-V(-H)
V(H)
—V(-H)
V ‖ BIN.
V (MILL-VOLTS)
V (MILLI-VOLTS)
H (KILO-GAUSS)
0
1.0
2.0
3.0
4.0
2.0 3.0 4.0 5.0 6.0 7.0 8.0 9.0 10.0 11.0 12.0 13.0

Figure 7.

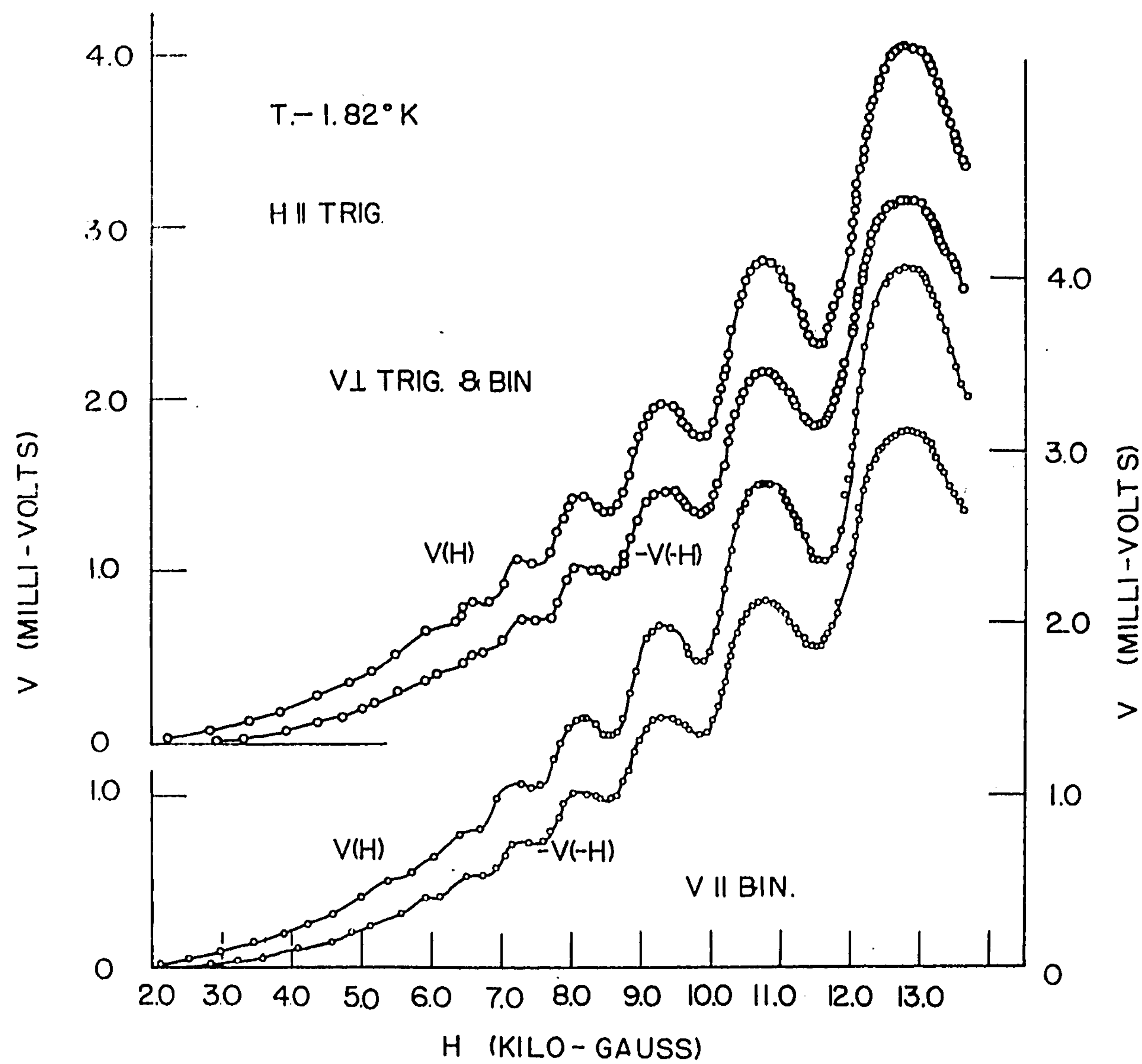
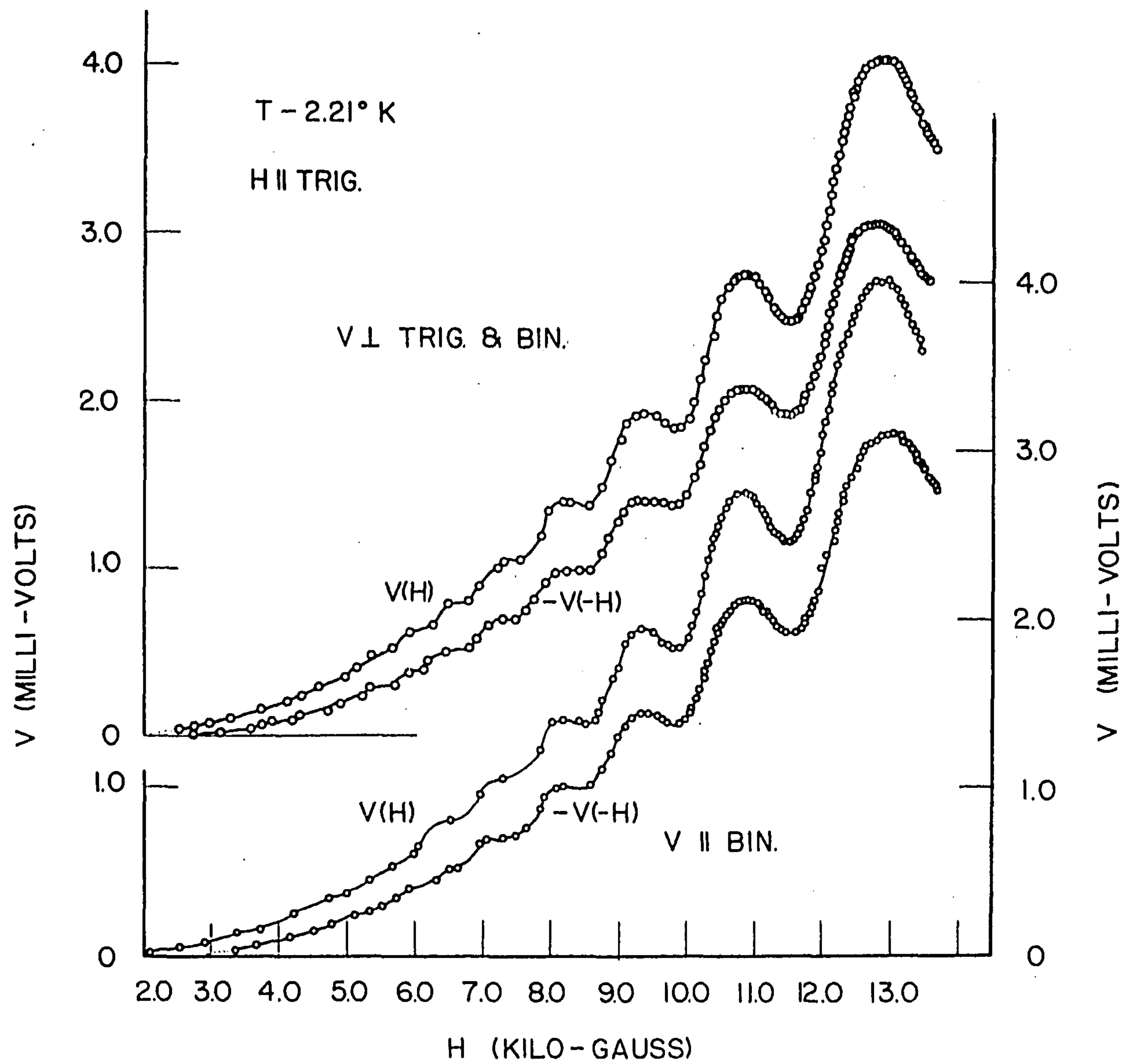

4.0
3.0
2.0
1.0
0
T.- 1.82° K
H ∥ TRIG.
V⊥ TRIG. & BIN
V(H)
-V(-H)
V (MILLI-VOLTS)
1.0
0
V(H)
-V(-H)
V ∥ BIN.
2.0 3.0 4.0 5.0 6.0 7.0 8.0 9.0 10.0 11.0 12.0 13.0
H (KILO-GAUSS)
4.0
3.0
2.0
1.0
0
V (MILLI-VOLTS)

Figure 8.



T - 2.21° K
H ∥ TRIG.
V ⊥ TRIG. & BIN.
V(H)
-V(-H)
V(H)
-V(-H)
V ∥ BIN.
V (MILLI-VOLTS)
V (MILLI-VOLTS)
H (KILO-GAUSS)
0
1.0
2.0
3.0
4.0
2.0 3.0 4.0 5.0 6.0 7.0 8.0 9.0 10.0 11.0 12.0 13.0

Figure 9.

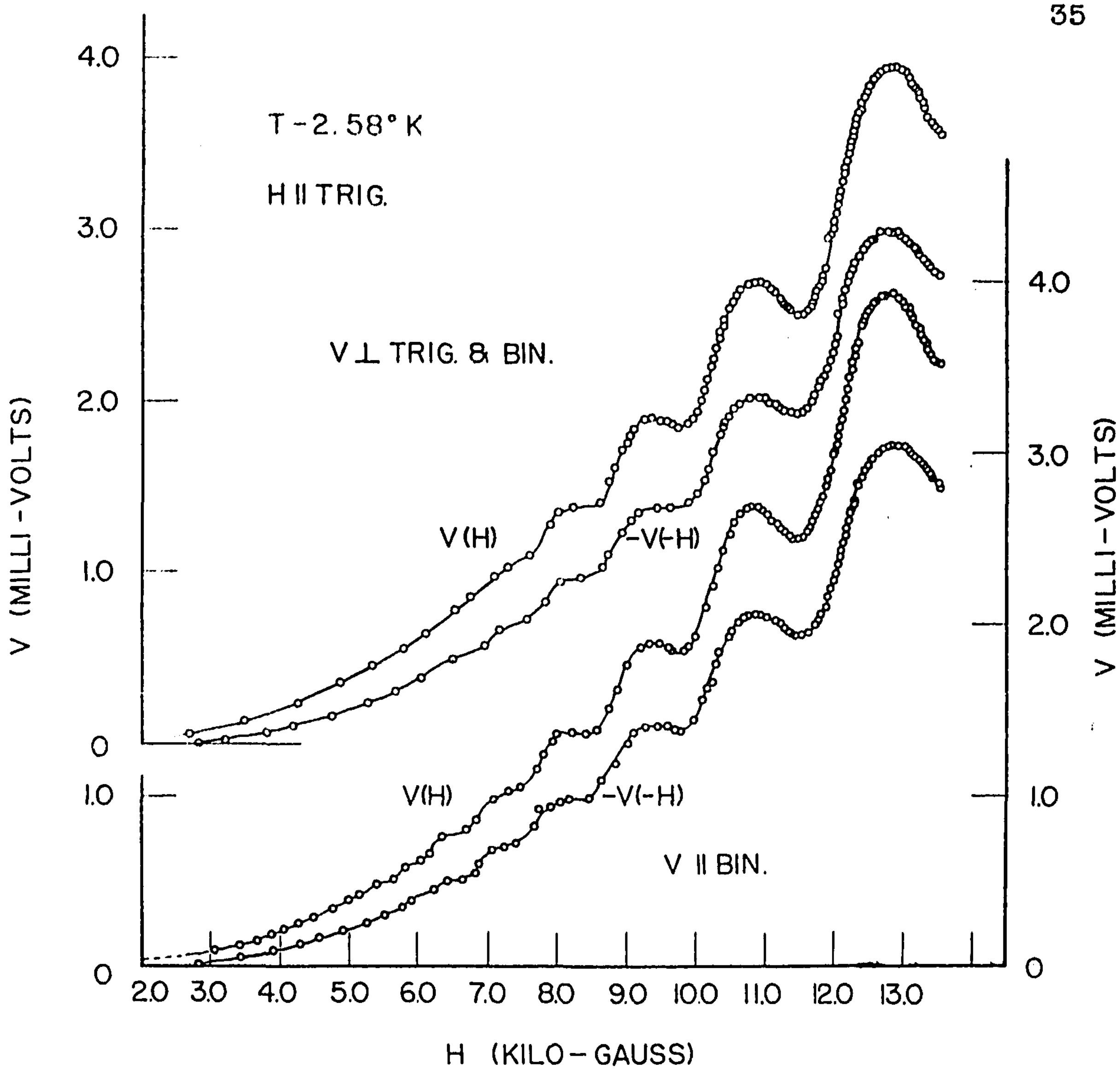

T - 2.58° K
H ∥ TRIG.
V ⊥ TRIG. & BIN.
V(H)
-V(-H)
V(H)
-V(-H)
V ∥ BIN.
V (MILLI-VOLTS)
V (MILLI-VOLTS)
H (KILO-GAUSS)
4.0
3.0
2.0
1.0
0
1.0
0
2.0 3.0 4.0 5.0 6.0 7.0 8.0 9.0 10.0 11.0 12.0 13.0
4.0
3.0
2.0
1.0
0

Figure 10.

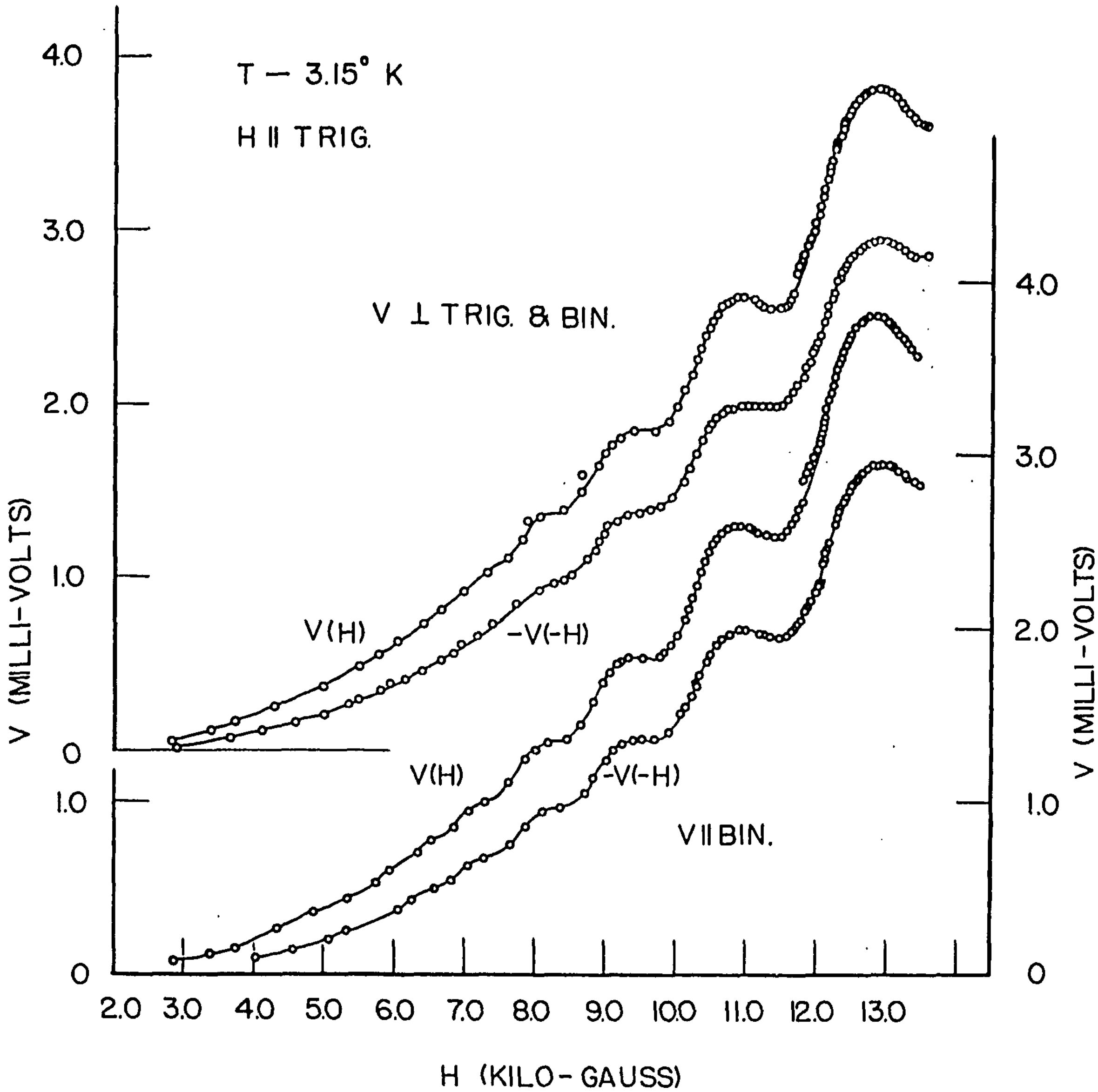
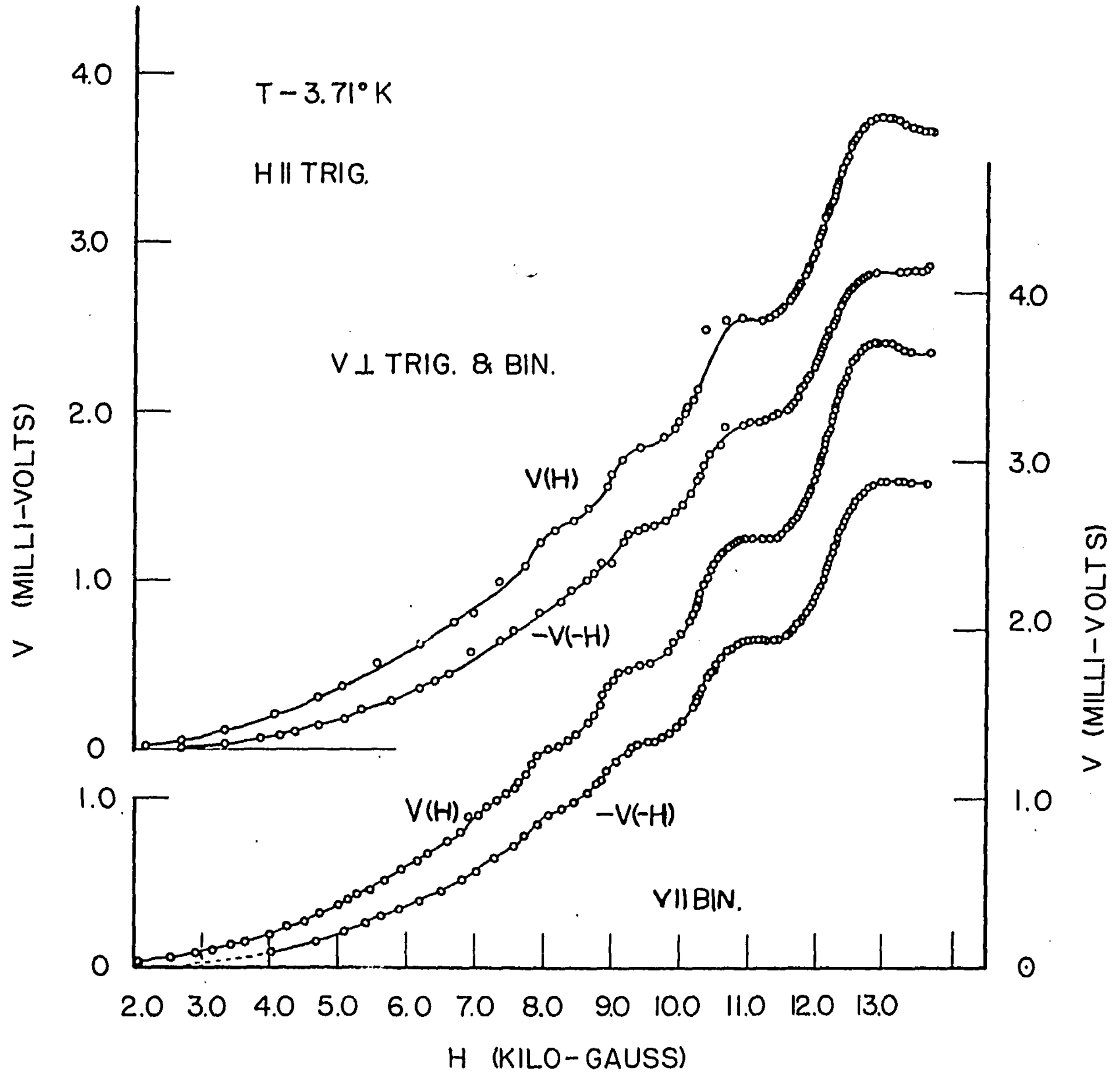
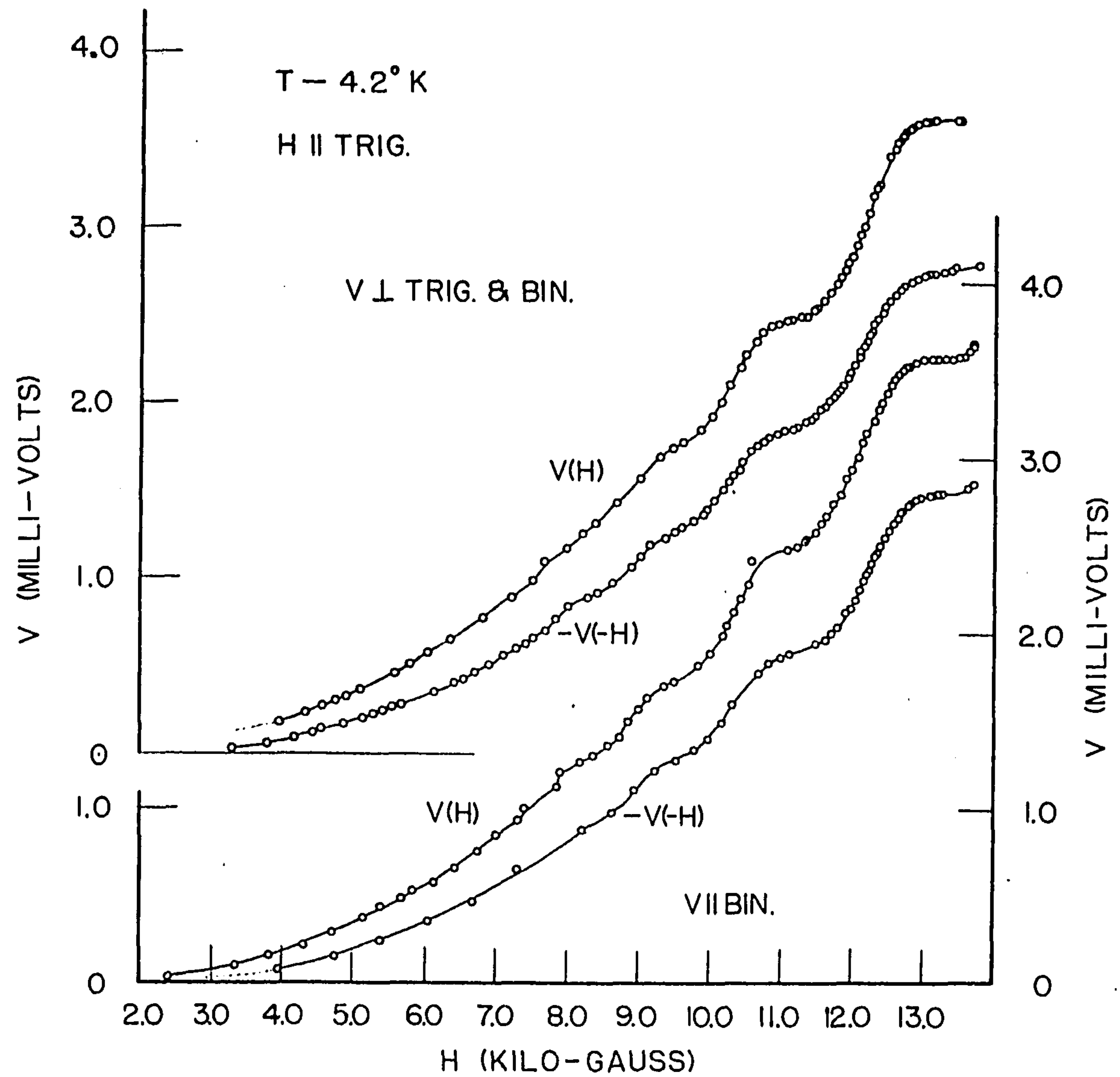

T — 3.15° K
H ∥ TRIG.
V ⊥ TRIG. & BIN.
V(H)
-V(-H)
V(H)
-V(-H)
V ∥ BIN.
V (MILLI-VOLTS)
V (MILLI-VOLTS)
H (KILO-GAUSS)
0
1.0
2.0
3.0
4.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
11.0
12.0
13.0

Figure 11.



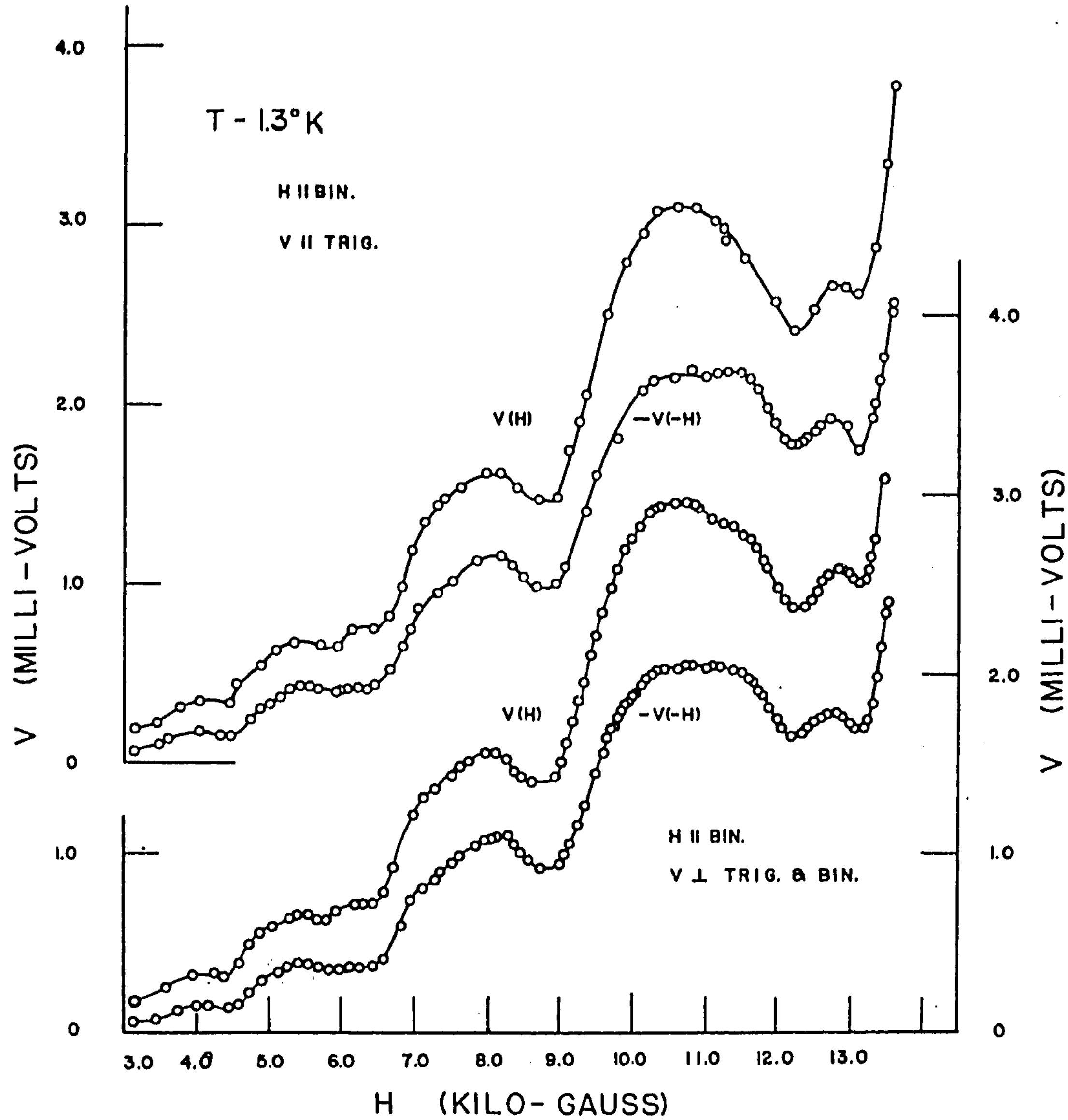
T − 3.71°K
H ‖ TRIG.
V ⊥ TRIG. & BIN.
V(H)
−V(−H)
V(H)
−V(−H)
V ‖ BIN.
V (MILLI-VOLTS)
V (MILLI-VOLTS)
H (KILO-GAUSS)
0
1.0
2.0
3.0
4.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
11.0
12.0
13.0

Figure 12.



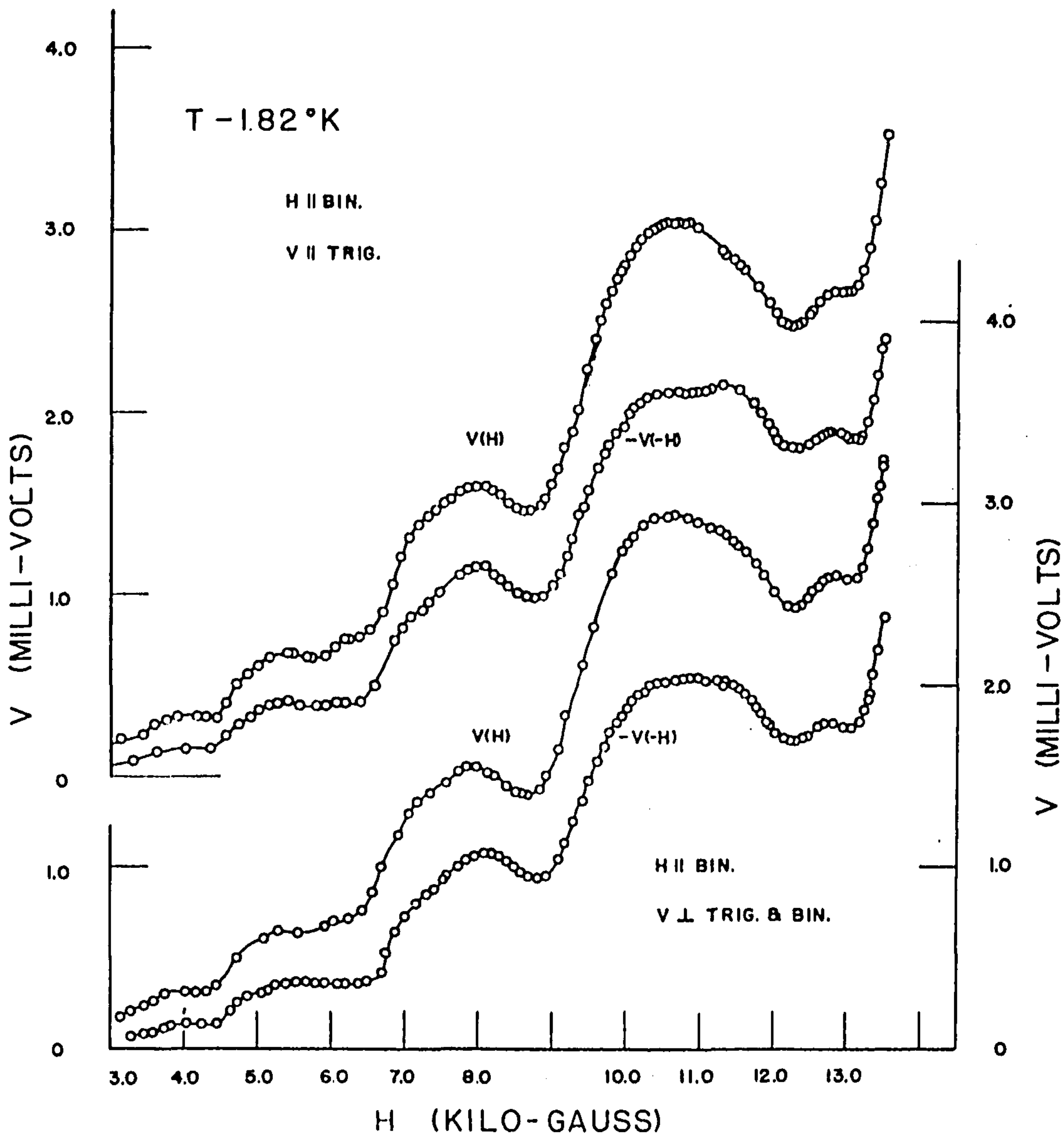
4.0
3.0
2.0
1.0
0
1.0
0
V (MILLI-VOLTS)
T — 4.2° K
H ll TRIG.
V ⊥ TRIG. & BIN.
V(H)
-V(-H)
V(H)
-V(-H)
V ll BIN.
4.0
3.0
2.0
1.0
0
V (MILLI-VOLTS)
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
11.0
12.0
13.0
H (KILO-GAUSS)

Figure 13.



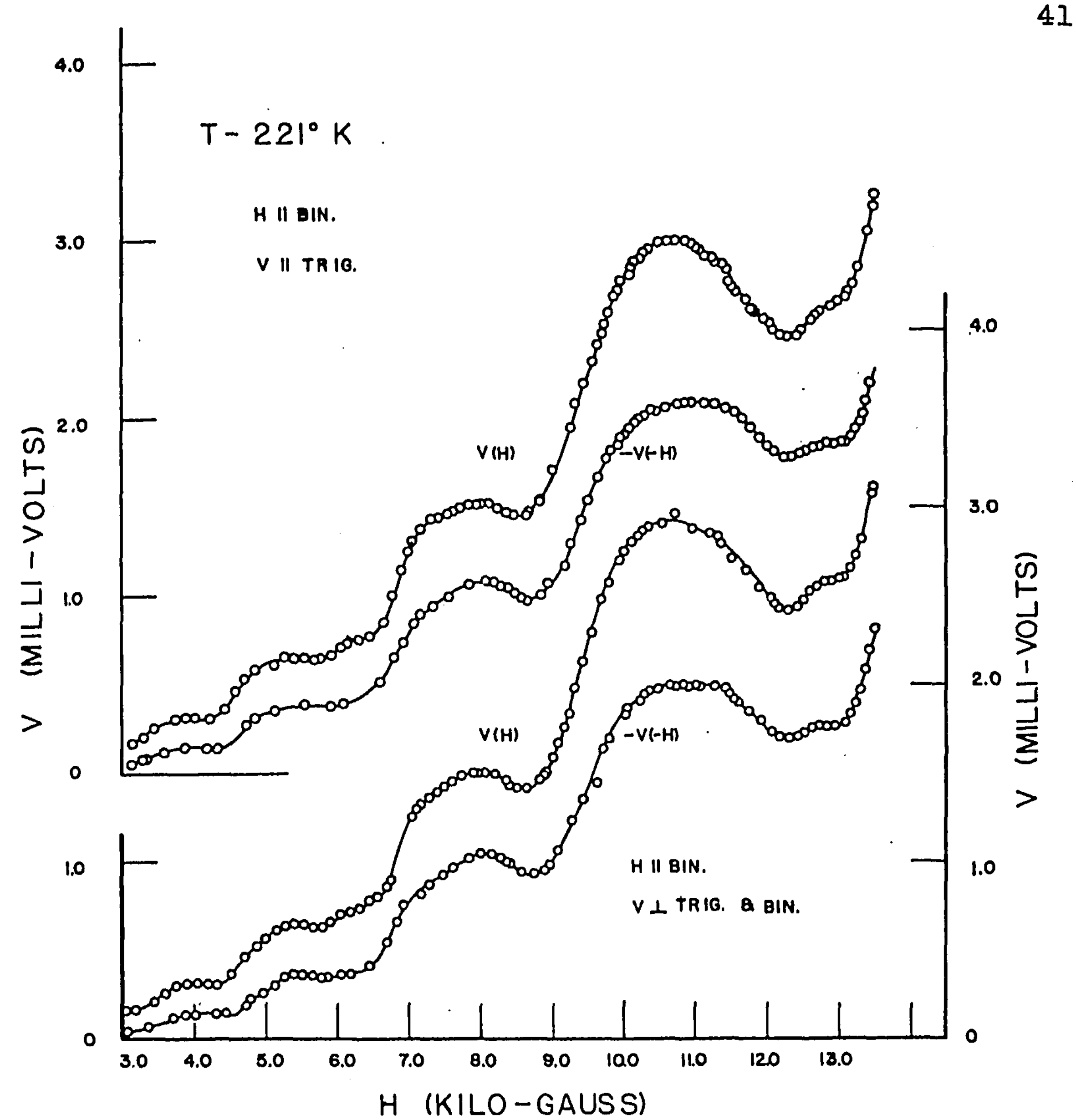
T - 1.3°K
H ‖ BIN.
V ‖ TRIG.
V(H)
—V(-H)
V(H)
—V(-H)
H ‖ BIN.
V ⊥ TRIG. & BIN.
V (MILLI-VOLTS)
V (MILLI-VOLTS)
H (KILO-GAUSS)
0
1.0
2.0
3.0
4.0
0
1.0
2.0
3.0
4.0
0
1.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
11.0
12.0
13.0

Figure 14.



T - 1.82 °K
H ‖ BIN.
V ‖ TRIG.
V(H)
-V(-H)
V(H)
-V(-H)
H ‖ BIN.
V ⊥ TRIG. & BIN.
V (MILLI-VOLTS)
V (MILLI-VOLTS)
H (KILO-GAUSS)
0
1.0
2.0
3.0
4.0
3.0
4.0
5.0
6.0
7.0
8.0
10.0
11.0
12.0
13.0

Figure 15.



T - 221° K
H ∥ BIN.
V ∥ TRIG.
V(H)
-V(-H)
V(H)
-V(-H)
H ∥ BIN.
V ⊥ TRIG. & BIN.
V (MILLI-VOLTS)
V (MILLI-VOLTS)
H (KILO-GAUSS)

Figure 16.

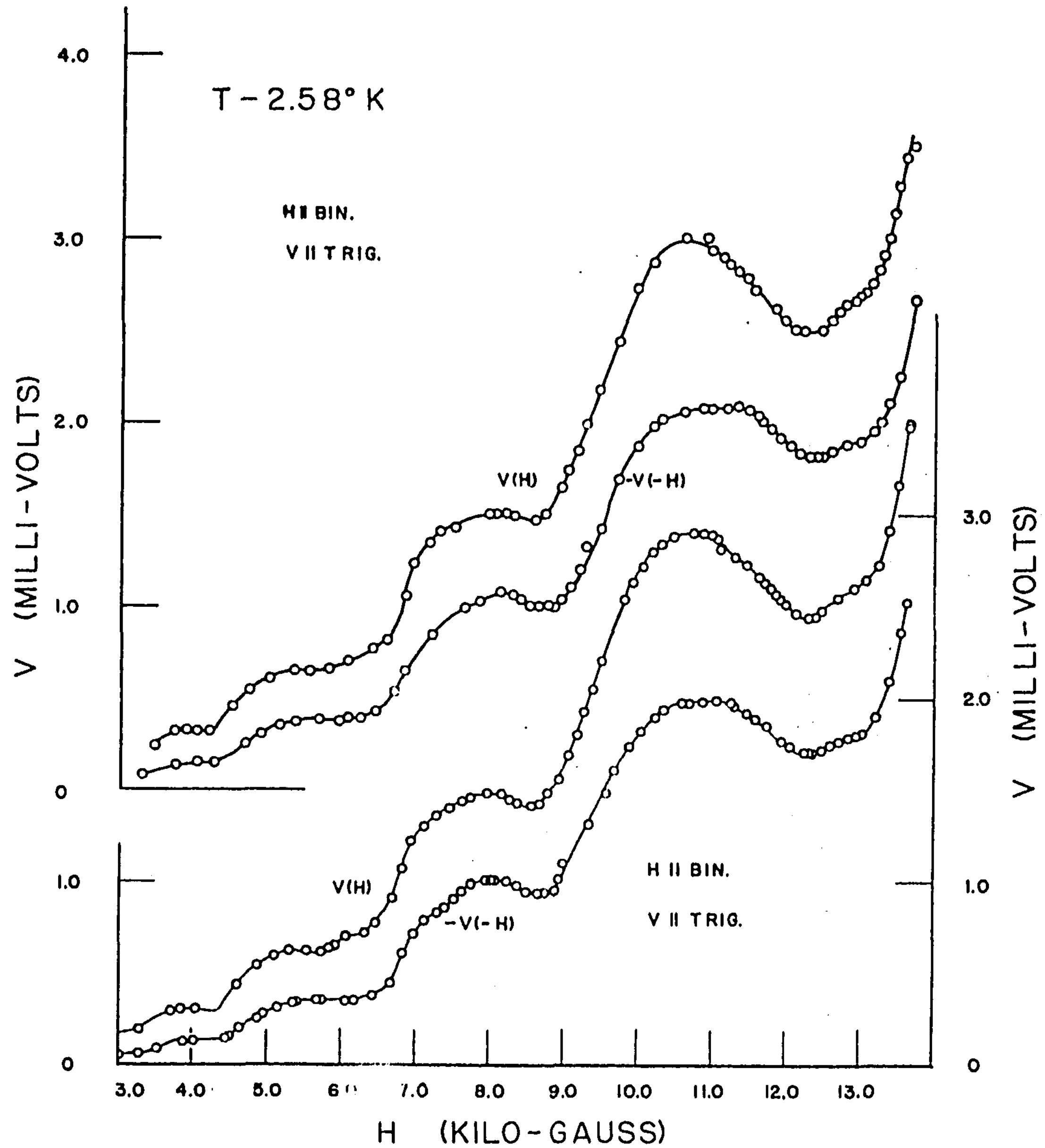

T - 2.58° K
H ∥ BIN.
V ∥ TRIG.
V(H)
-V(-H)
V(H)
-V(-H)
H ∥ BIN.
V ∥ TRIG.
V (MILLI-VOLTS)
0
1.0
2.0
3.0
4.0
0
1.0
V (MILLI-VOLTS)
0
1.0
2.0
3.0
3.0
4.0
5.0
7.0
8.0
9.0
10.0
11.0
12.0
13.0
H (KILO-GAUSS)

Figure 17.

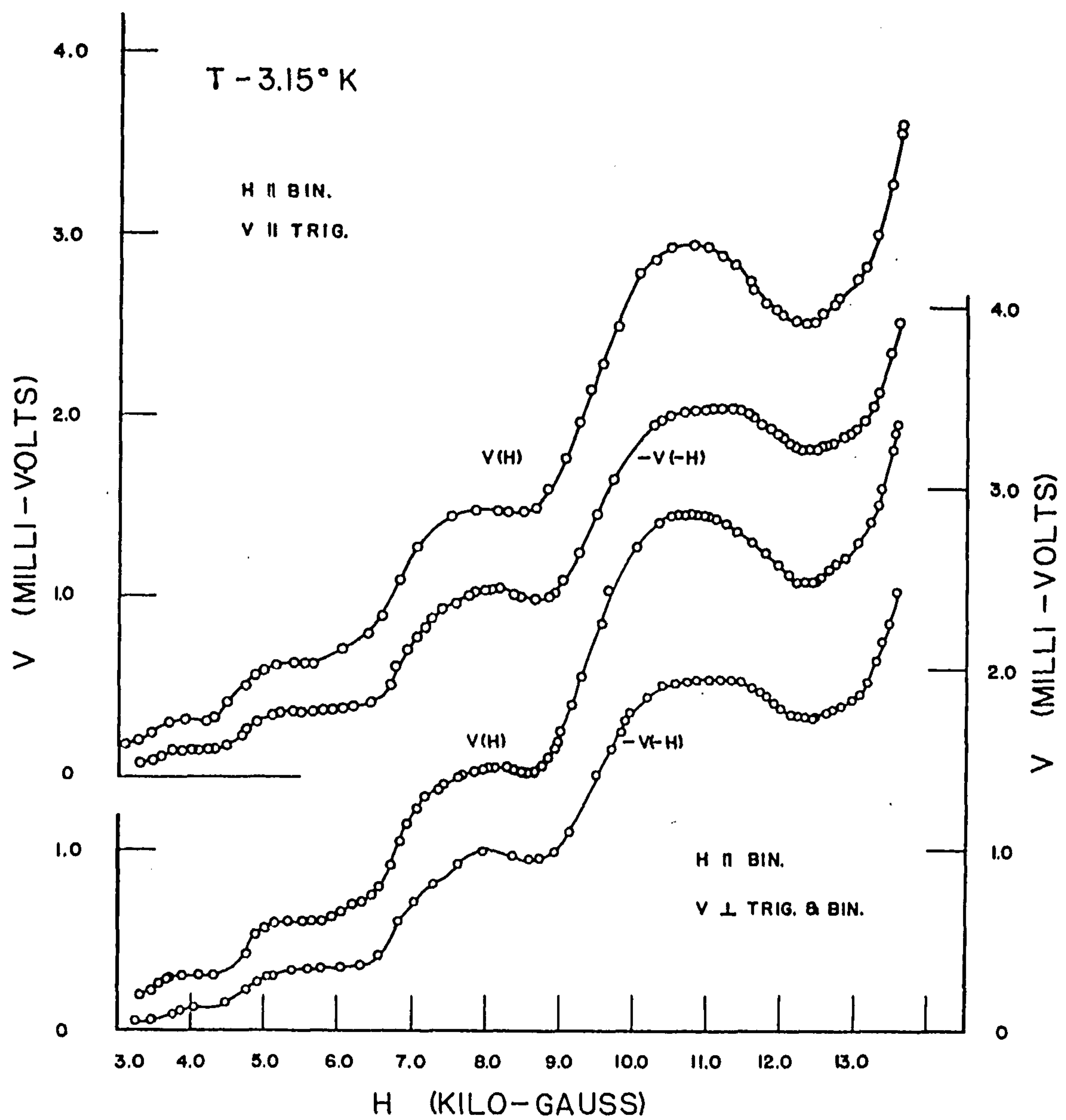
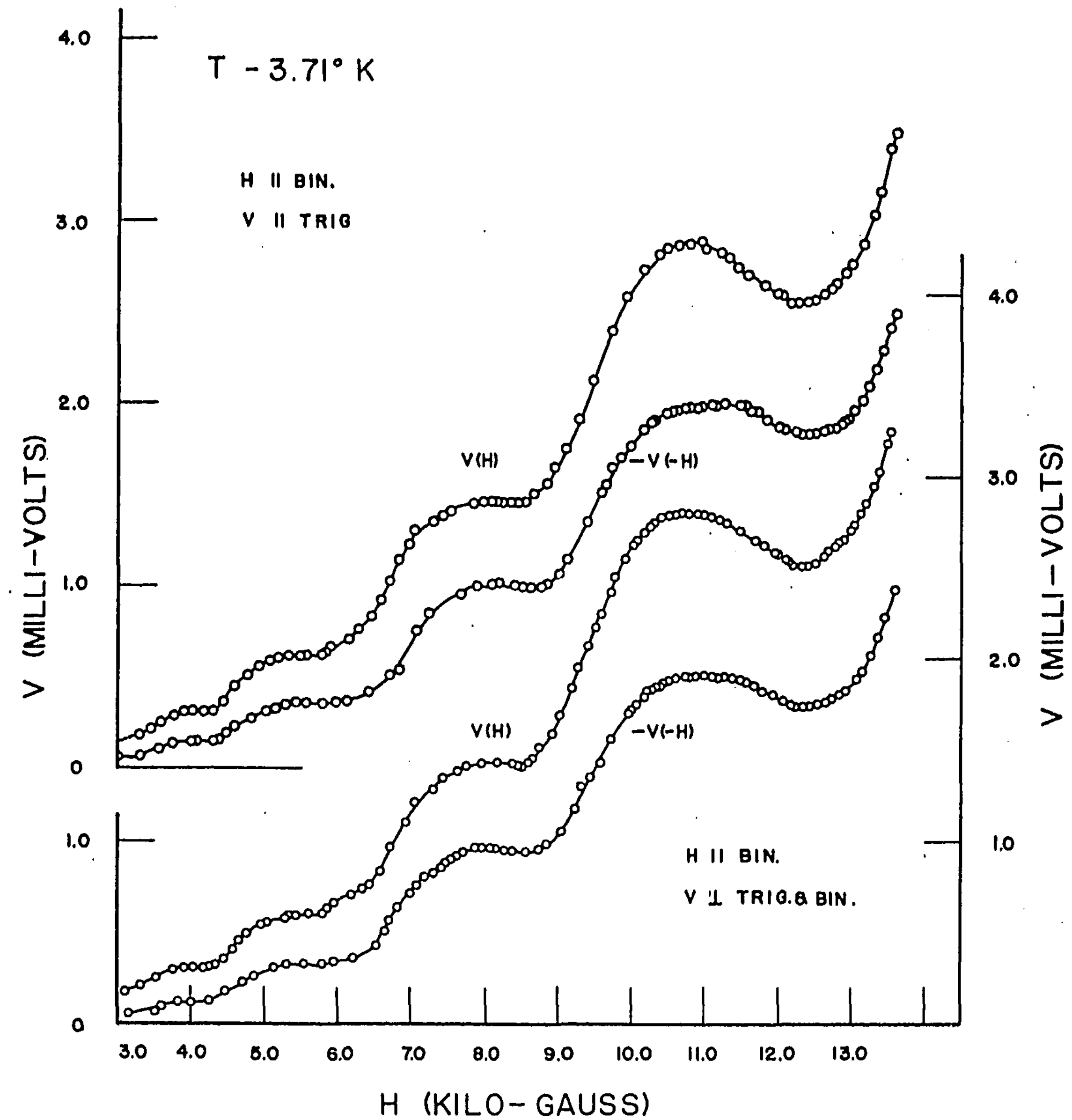

T - 3.15° K
H ‖ BIN.
V ‖ TRIG.
V(H)
-V(-H)
V(H)
-V(-H)
H ‖ BIN.
V ⊥ TRIG. & BIN.
V (MILLI-VOLTS)
V (MILLI-VOLTS)
H (KILO-GAUSS)
4.0
3.0
2.0
1.0
0
1.0
0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
11.0
12.0
13.0

Figure 18.



T - 3.71° K
H ‖ BIN.
V ‖ TRIG
V(H)
-V(-H)
V(H)
-V(-H)
H ‖ BIN.
V ⊥ TRIG.& BIN.
V (MILLI-VOLTS)
V (MILLI-VOLTS)
H (KILO-GAUSS)
4.0
3.0
2.0
1.0
0
1.0
0
4.0
3.0
2.0
1.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
11.0
12.0
13.0

Figure 19.

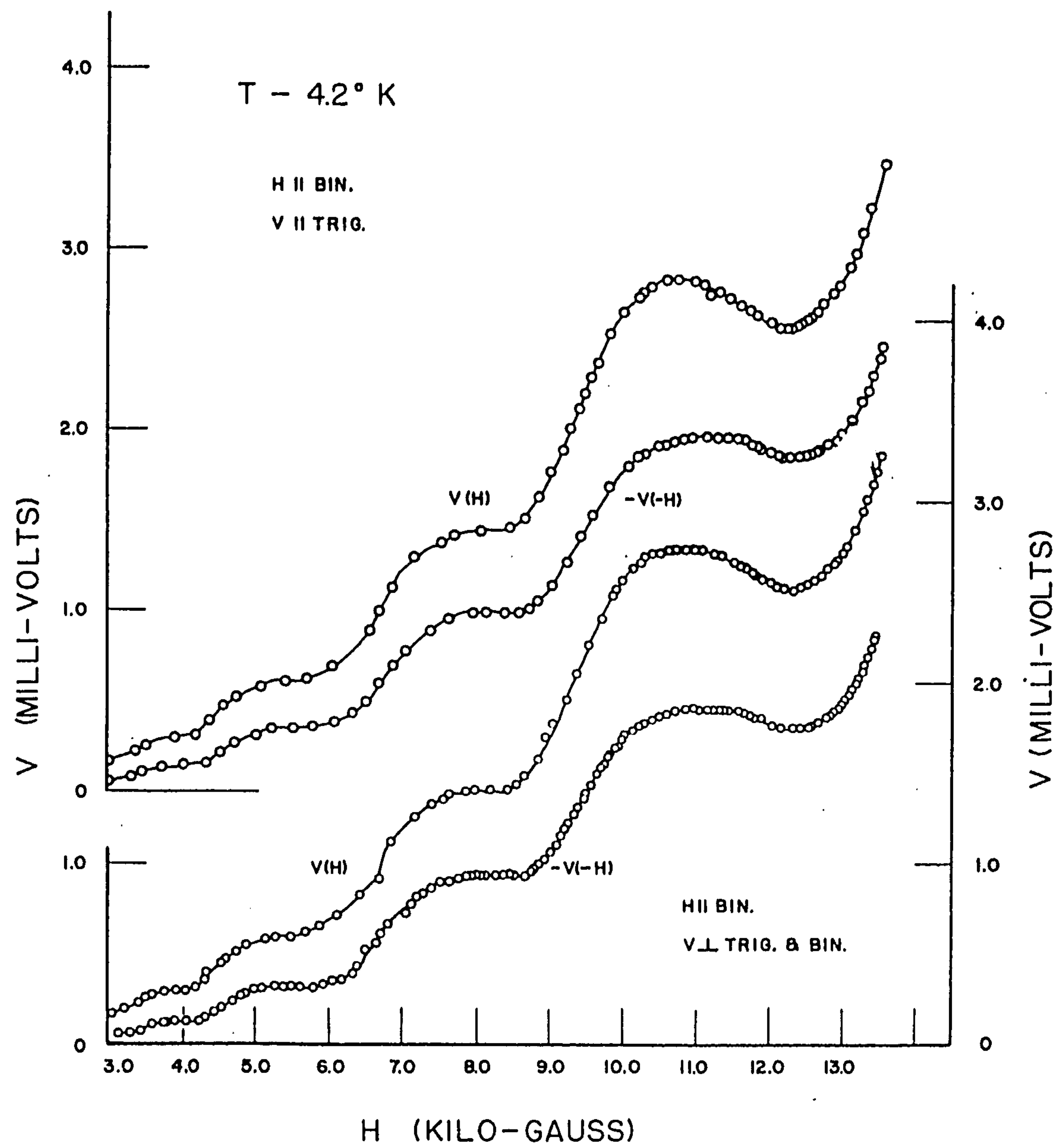

T - 4.2° K
H ‖ BIN.
V ‖ TRIG.
V(H)
-V(-H)
V(H)
-V(-H)
H ‖ BIN.
V ⊥ TRIG. & BIN.
V (MILLI-VOLTS)
V (MILLI-VOLTS)
H (KILO-GAUSS)
4.0
3.0
2.0
1.0
0
1.0
0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
11.0
12.0
13.0

Figure 20.

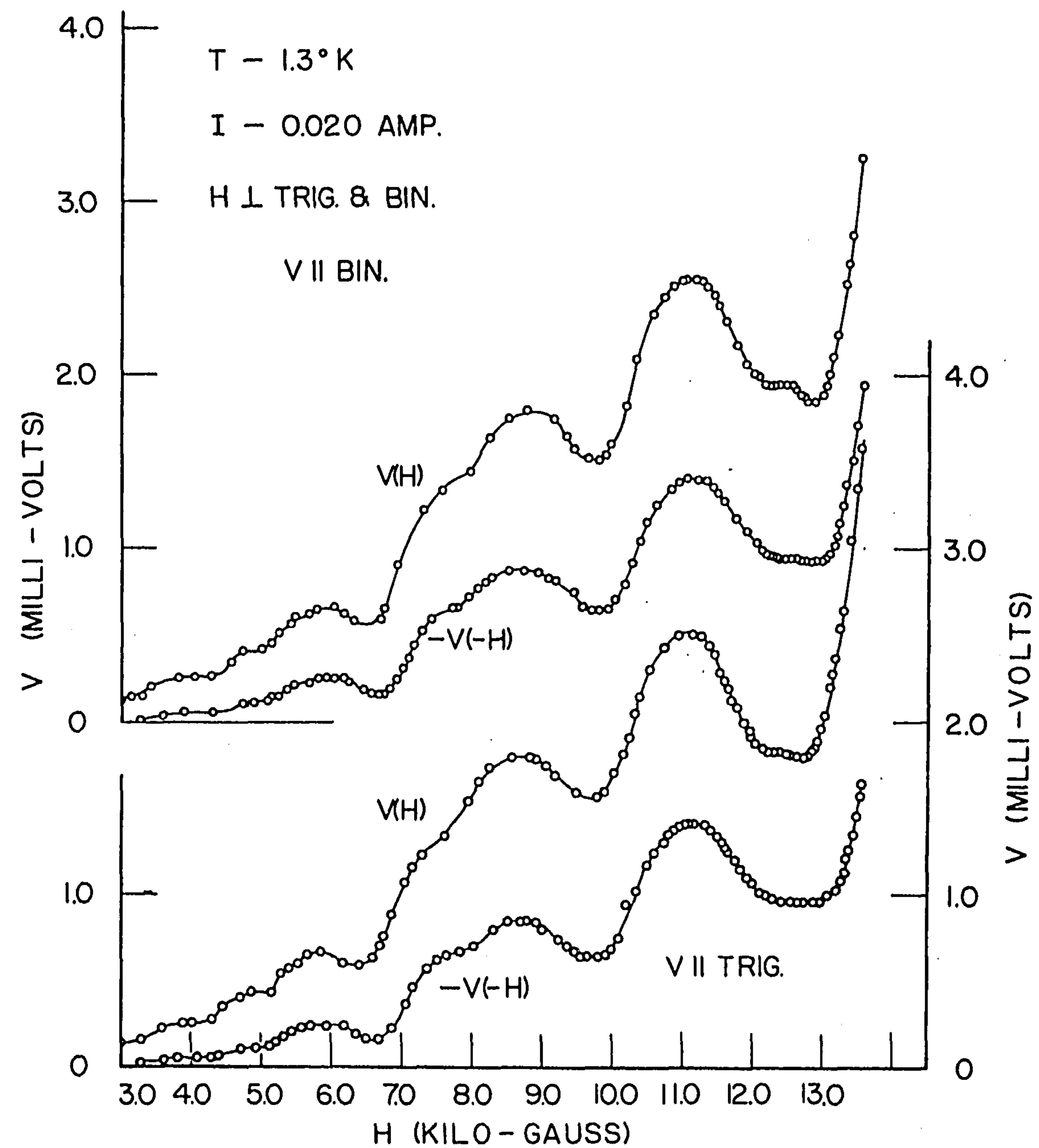

T — 1.3° K
I — 0.020 AMP.
H ⊥ TRIG. & BIN.
V ∥ BIN.
V(H)
−V(−H)
V(H)
−V(−H)
V ∥ TRIG.
V (MILLI - VOLTS)
V (MILLI-VOLTS)
H (KILO-GAUSS)
0
1.0
2.0
3.0
4.0
3.0 4.0 5.0 6.0 7.0 8.0 9.0 10.0 11.0 12.0 13.0

Figure 21.

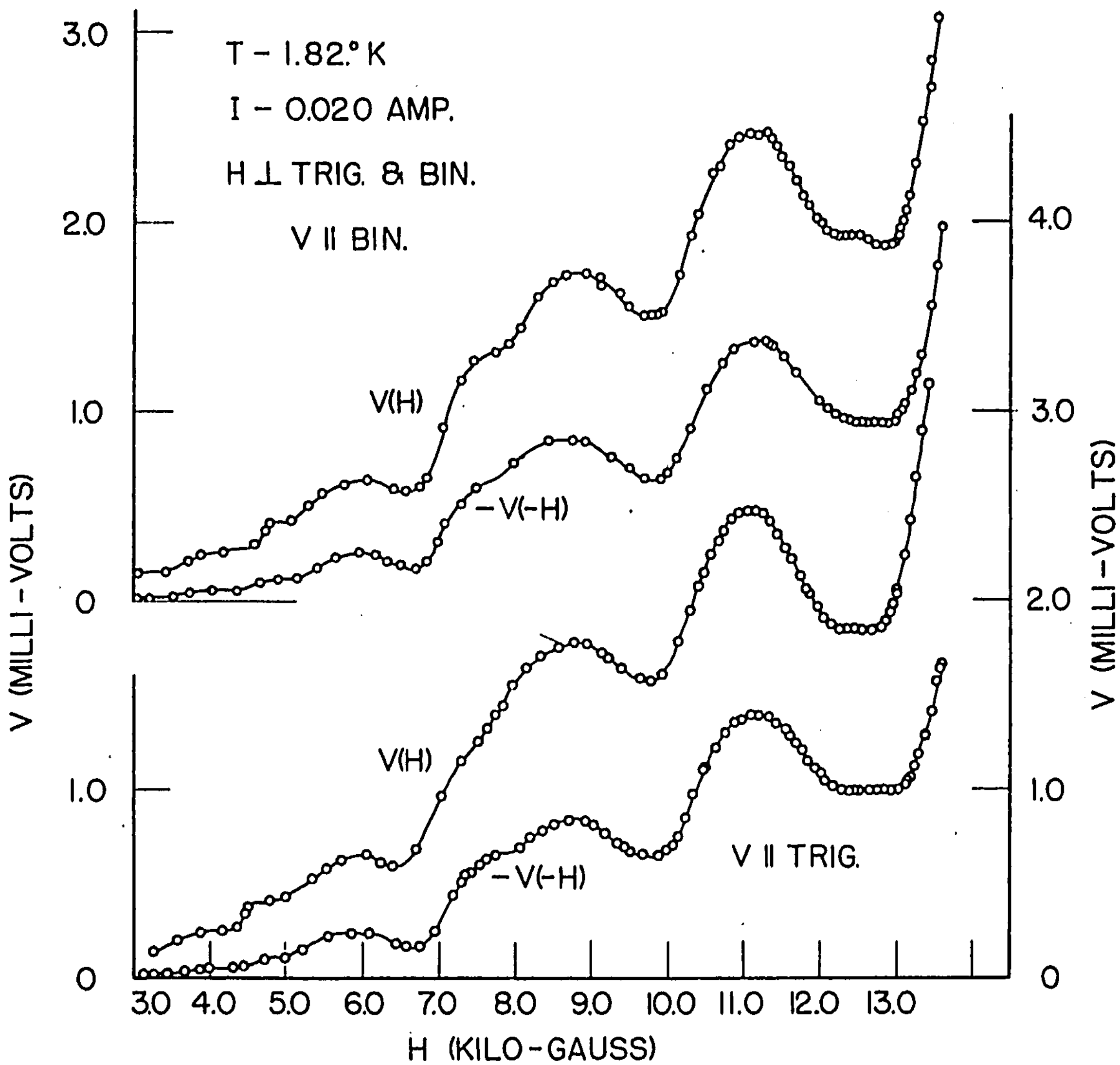

T - 1.82° K
I - 0.020 AMP.
H ⊥ TRIG. & BIN.
V ∥ BIN.
V(H)
-V(-H)
V(H)
-V(-H)
V ∥ TRIG.
V (MILLI-VOLTS)
V (MILLI-VOLTS)
H (KILO-GAUSS)
3.0
2.0
1.0
0
1.0
0
4.0
3.0
2.0
1.0
0
3.0 4.0 5.0 6.0 7.0 8.0 9.0 10.0 11.0 12.0 13.0

Figure 22.

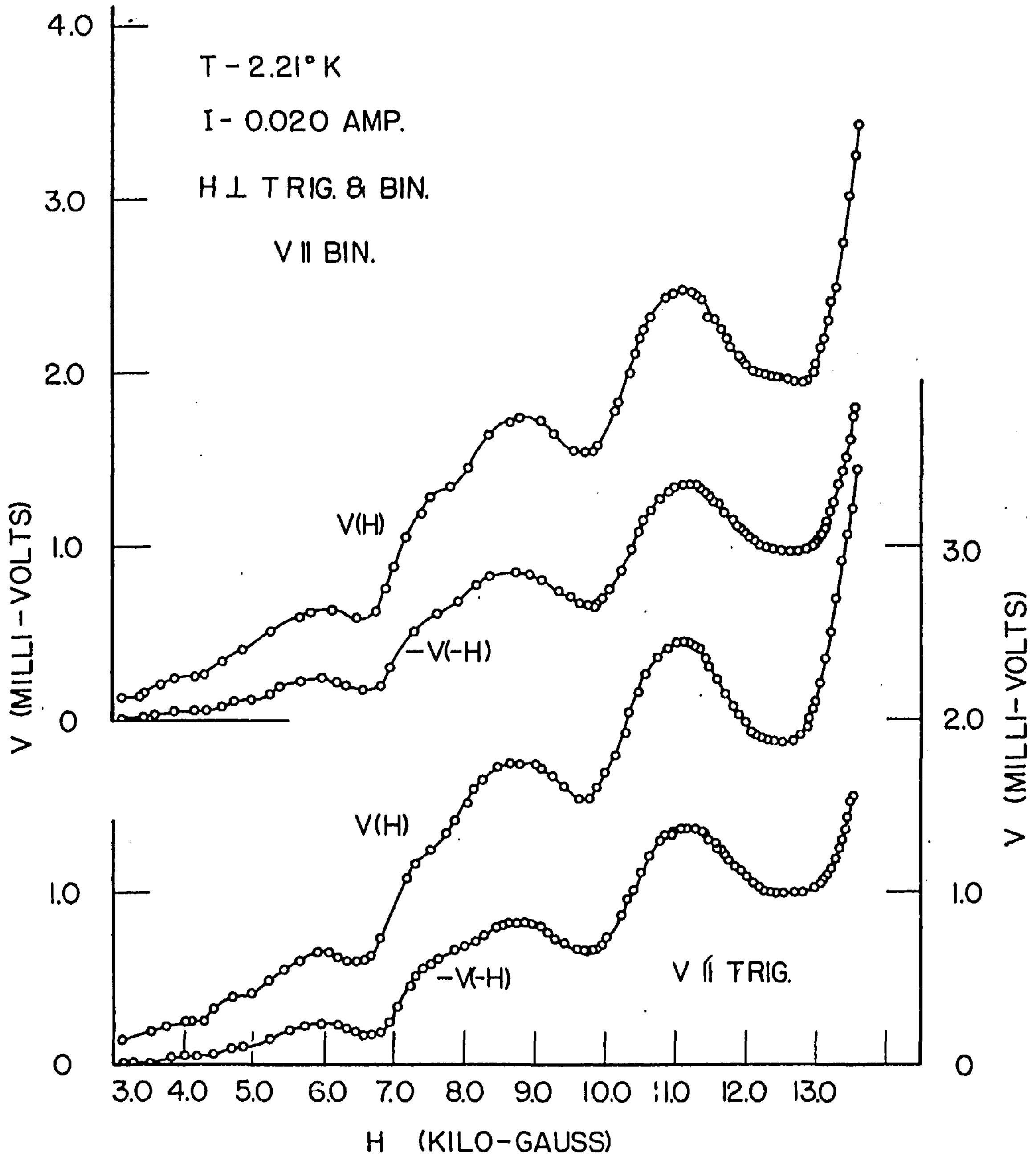

T - 2.21° K
I - 0.020 AMP.
H ⊥ TRIG. & BIN.
V ∥ BIN.
V(H)
-V(-H)
V(H)
-V(-H)
V ∥ TRIG.
V (MILLI-VOLTS)
V (MILLI-VOLTS)
H (KILO-GAUSS)
4.0
3.0
2.0
1.0
0
1.0
0
3.0
2.0
1.0
0
3.0 4.0 5.0 6.0 7.0 8.0 9.0 10.0 11.0 12.0 13.0

Figure 23.

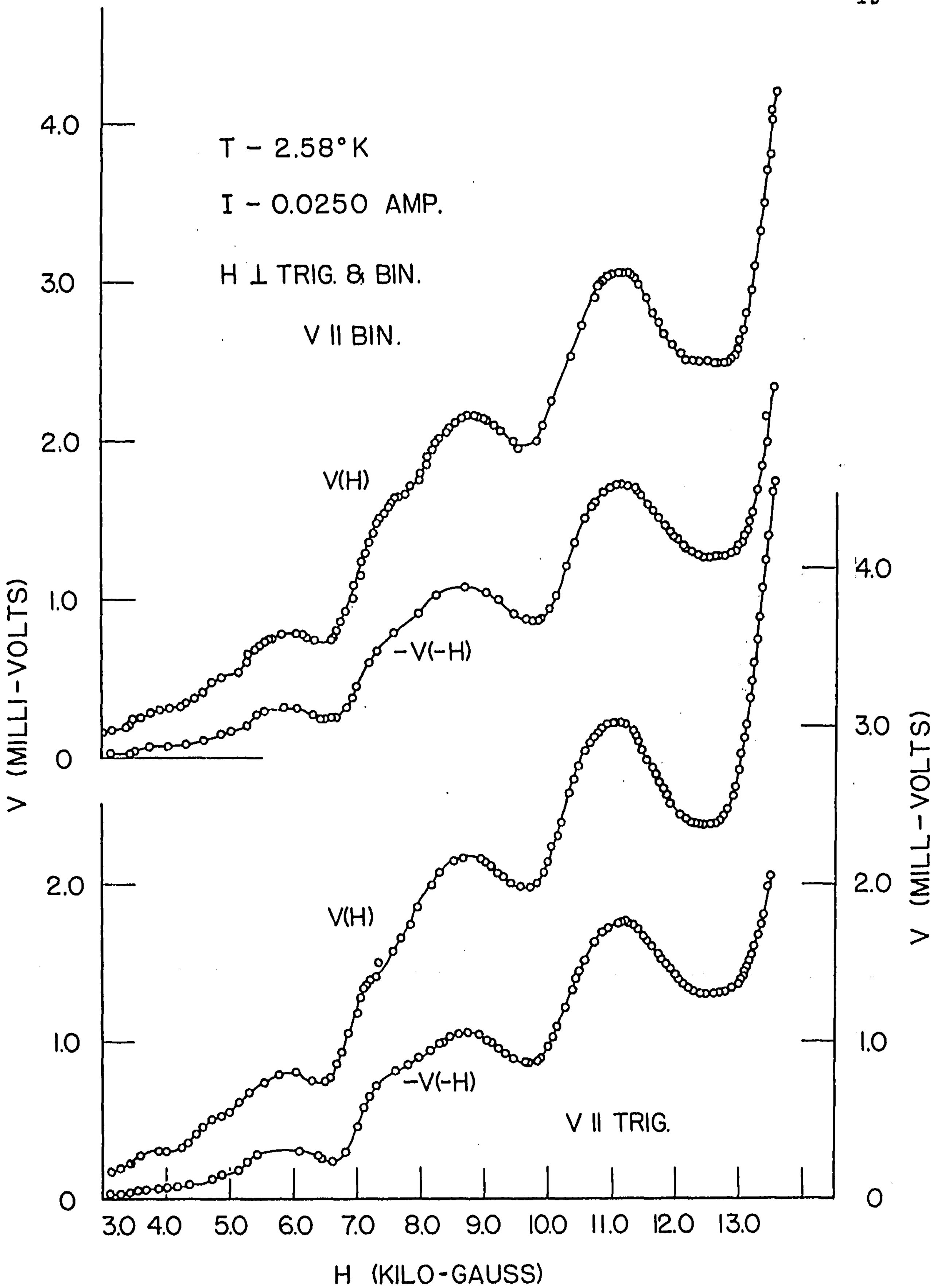
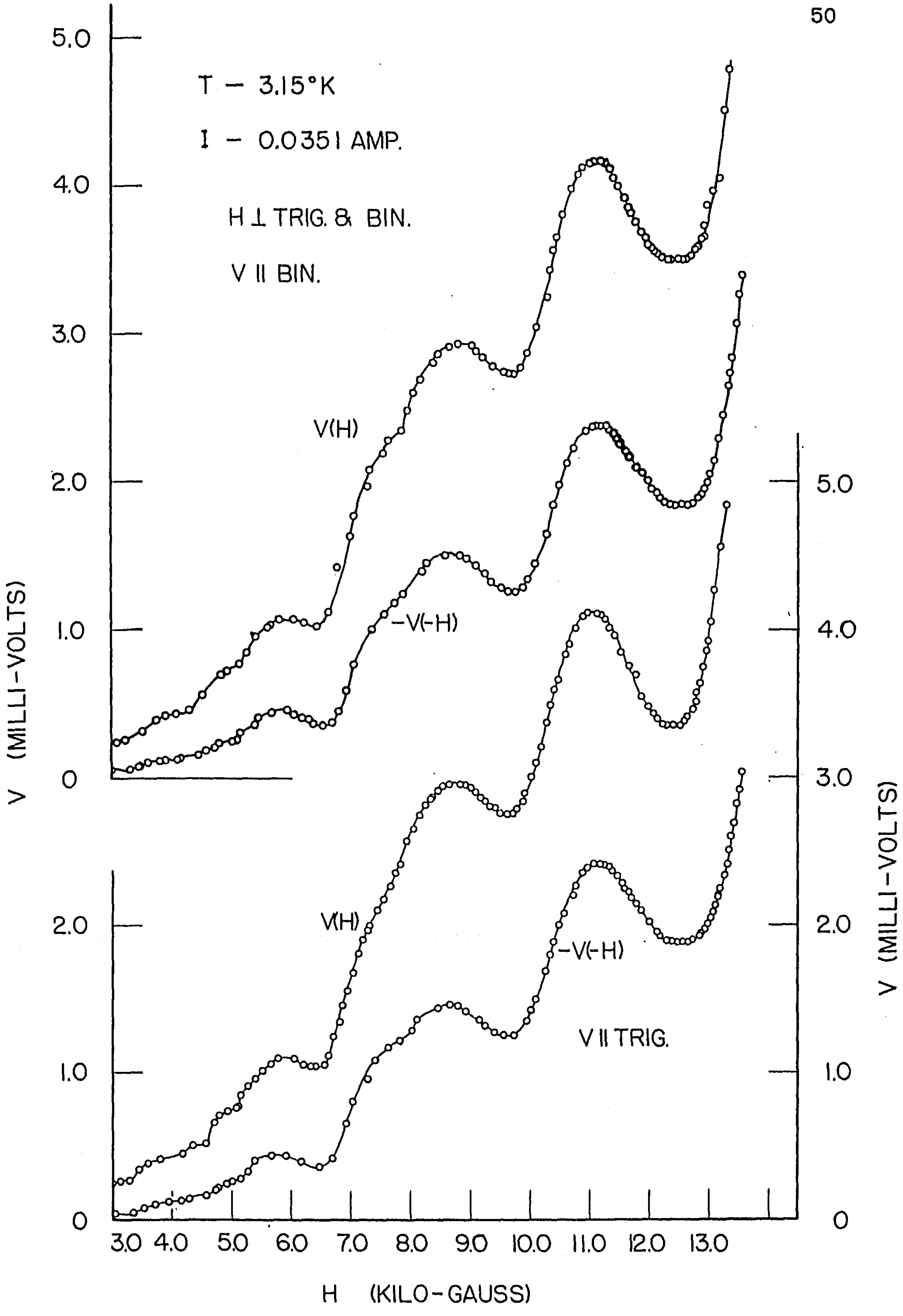

T - 2.58°K
I - 0.0250 AMP.
H ⊥ TRIG. & BIN.
V II BIN.
V(H)
-V(-H)
V II TRIG.
V (MILLI-VOLTS)
V (MILL-VOLTS)
H (KILO-GAUSS)
0
1.0
2.0
3.0
4.0
3.0 4.0 5.0 6.0 7.0 8.0 9.0 10.0 11.0 12.0 13.0

Figure 24.



T — 3.15°K
I — 0.0351 AMP.
H ⊥ TRIG. & BIN.
V ∥ BIN.
V(H)
−V(−H)
V(H)
−V(−H)
V ∥ TRIG.
V (MILLI-VOLTS)
V (MILLI-VOLTS)
H (KILO-GAUSS)

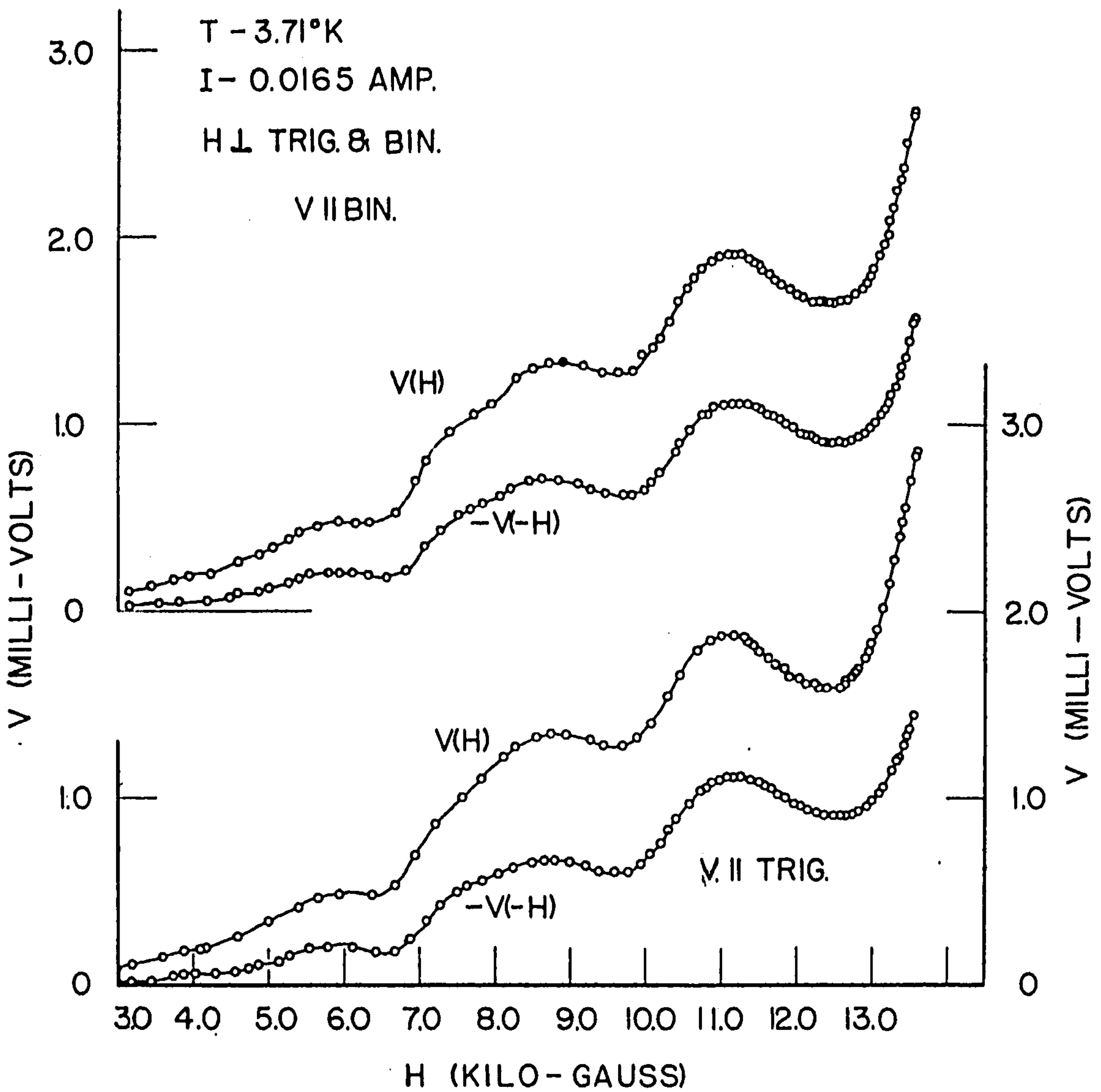

T - 3.71°K
I- 0.0165 AMP.
H ⊥ TRIG. & BIN.
V II BIN.
V(H)
-V(-H)
V(H)
-V(-H)
V II TRIG.
3.0
2.0
1.0
0
1.0
0
3.0
2.0
1.0
0
V (MILLI-VOLTS)
V (MILLI-VOLTS)
3.0 4.0 5.0 6.0 7.0 8.0 9.0 10.0 11.0 12.0 13.0
H (KILO-GAUSS)

Figure 26.

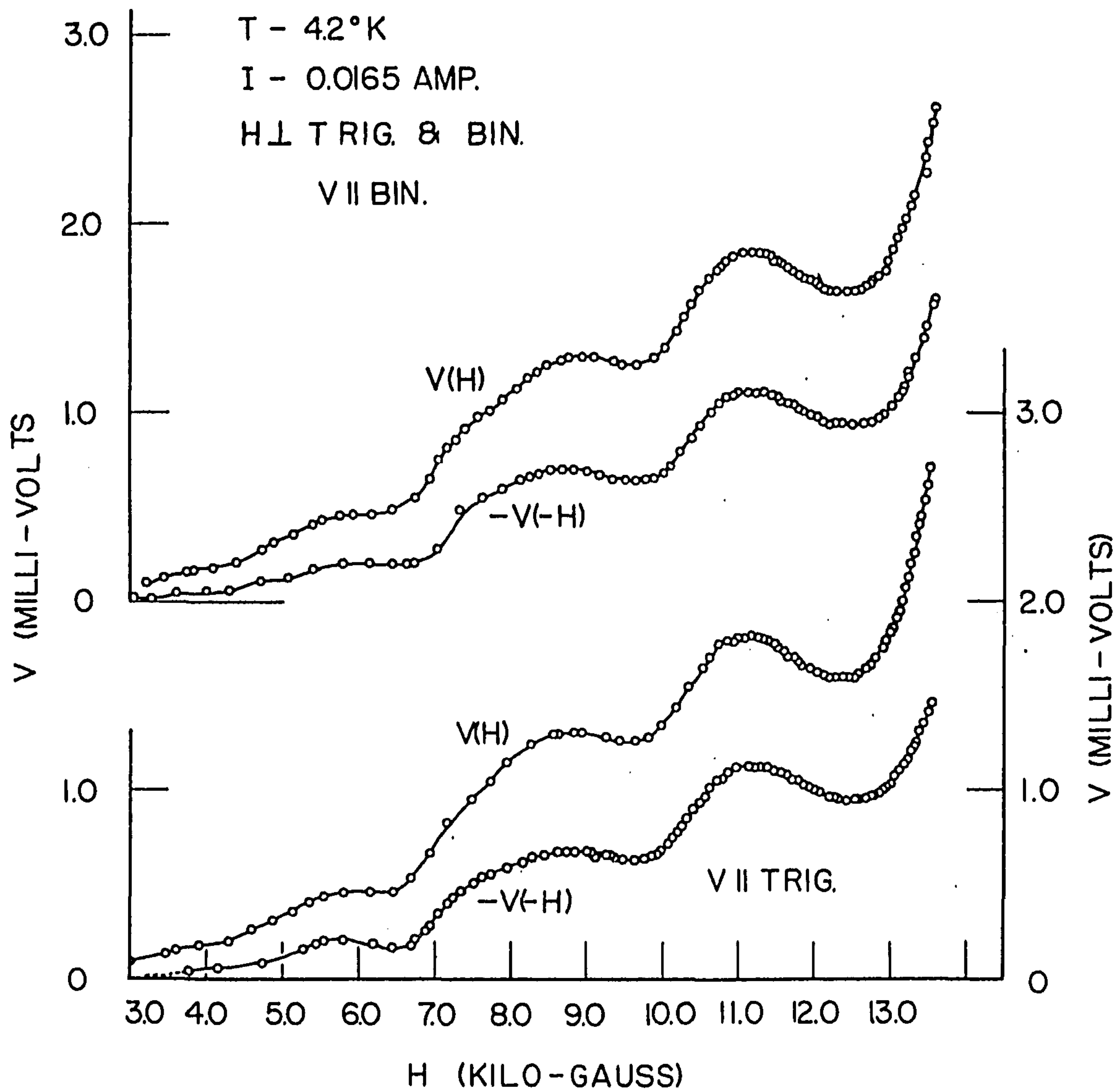

T - 4.2°K
I - 0.0165 AMP.
H⊥ TRIG. & BIN.
V ll BIN.
V(H)
-V(-H)
V ll TRIG.
V (MILLI-VOLTS
V (MILLI-VOLTS)
H (KILO-GAUSS)
0
1.0
2.0
3.0
3.0 4.0 5.0 6.0 7.0 8.0 9.0 10.0 11.0 12.0 13.0

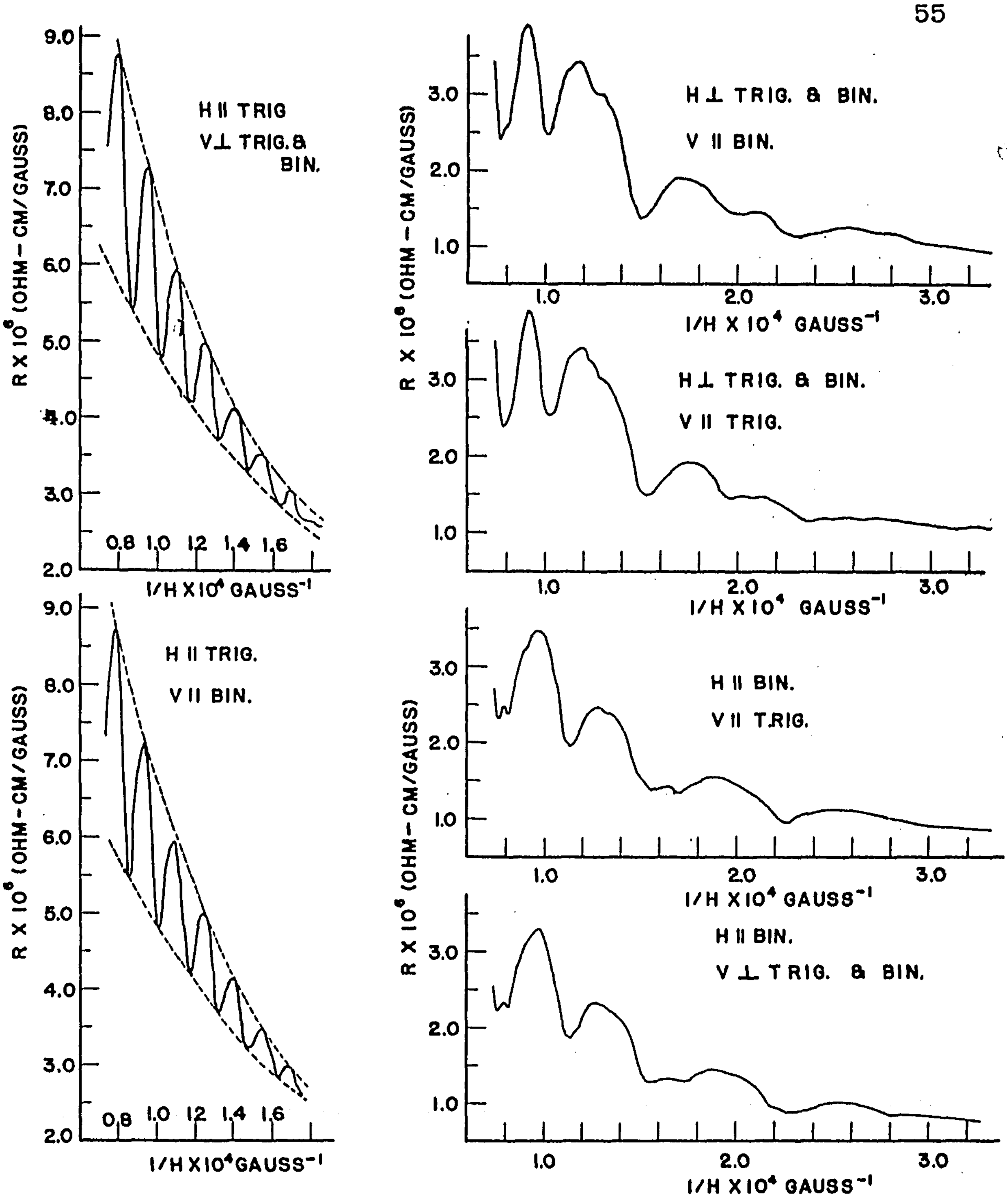
Figure 27.

dicular to the trigonal axis and the binary axis. The two upper graphs are made from measurements recorded with the Hall voltage probes parallel to the binary axis and the current probes parallel to the trigonal axis. In the lower set, the voltage was measured along the trigonal axis and the current probes were parallel to the binary axis.

The diameters of the circles centered about the experimental points are large enough to include the approximate error in each measurement. As noted in Appendix I, the error in the recorded Hall potential measurements is taken to be about 0.05 milli-volt. The error in the magnetic field measurements is approximately 2 percent at the higher field values (Appendix II).

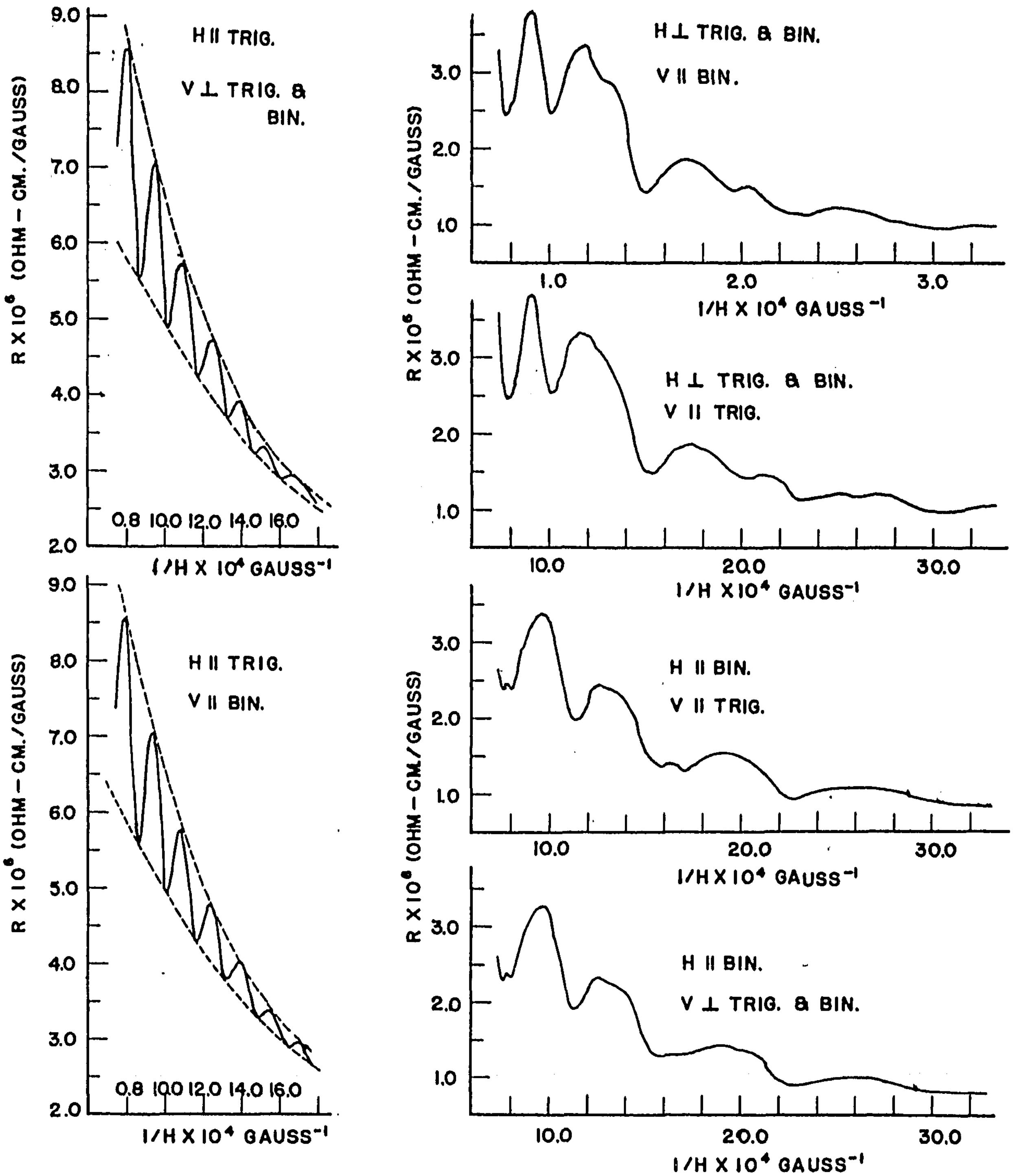
Two curves are drawn on each set of axes. The upper curve represents the voltage measured between the Hall probes with the field in one direction. The lower curve results from measurements made with the field reversed. As stated previously, the difference in potential between these two curves is the voltage drop due to the magneto-resistance of the crystal. The Hall potential at a specific field is the average of the two curves at this field value. The average, $V(H)/2 - V(-H)/2$, was taken directly from the curves by determining the mid-point between the intersections of the two curves with the line representing the field at that point. These numbers were not plotted, but were tabulated along with the field values at which they were averaged. From these numbers, the Hall coefficients were calculated.

The defining equation for the Hall coefficient, $R = (Vt)/(HI)$, was used in making these calculations. Here, V is the Hall potential in volts; $\underline{t}$ is the thickness of the crystal in centimeters (it is measured along the axis to which the magnetic field, H in gauss, is parallel); and I is the Hall current in amperes. The calculated Hall coefficients are tabulated in Appendix IV. These values were plotted against the reciprocals of their respective field strengths. The resulting curves are to be found in Figures Twenty-eight through Thirty-four.



T – 1.3° K

Figure 28.



T - 1.82°K

Figure 29.

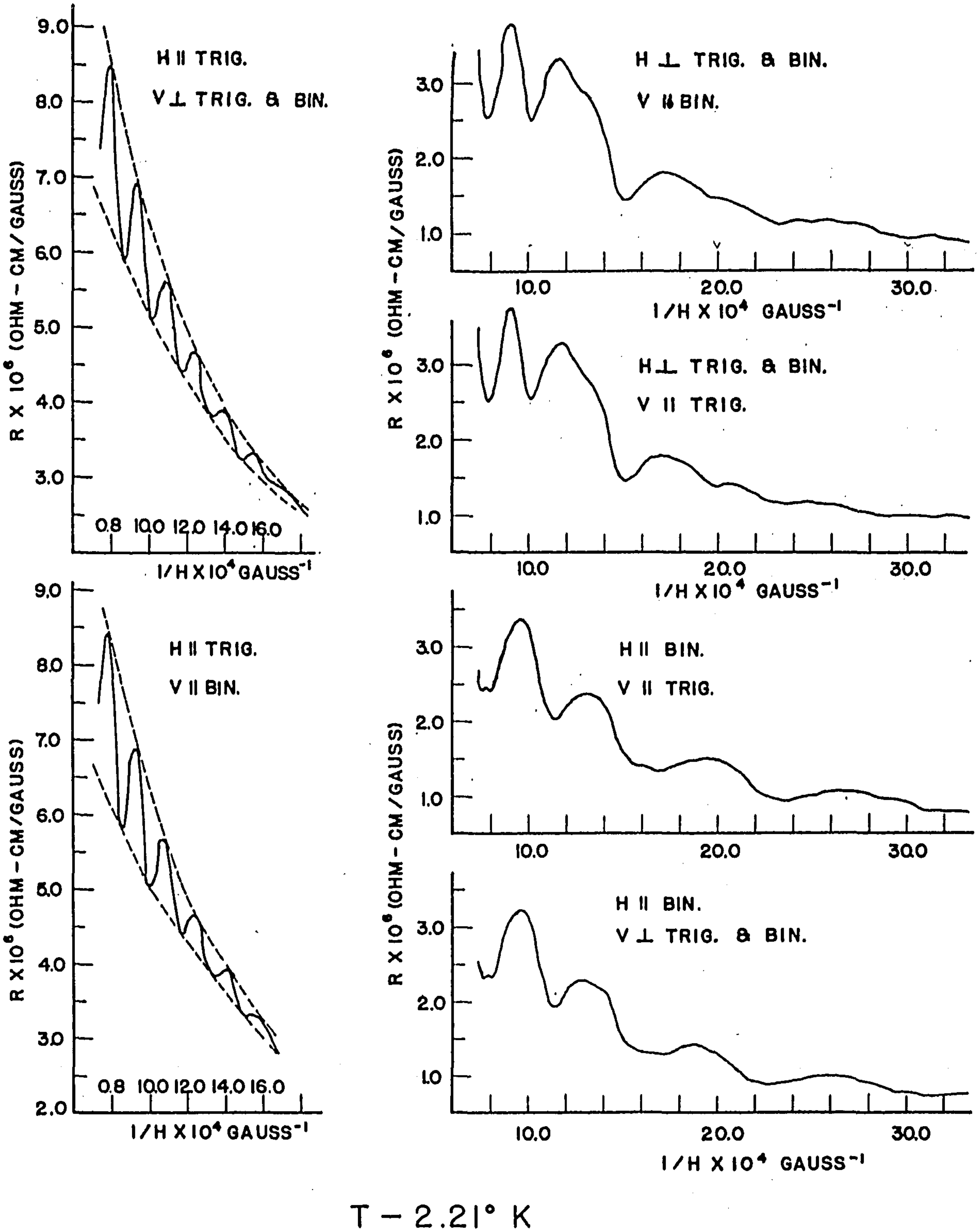
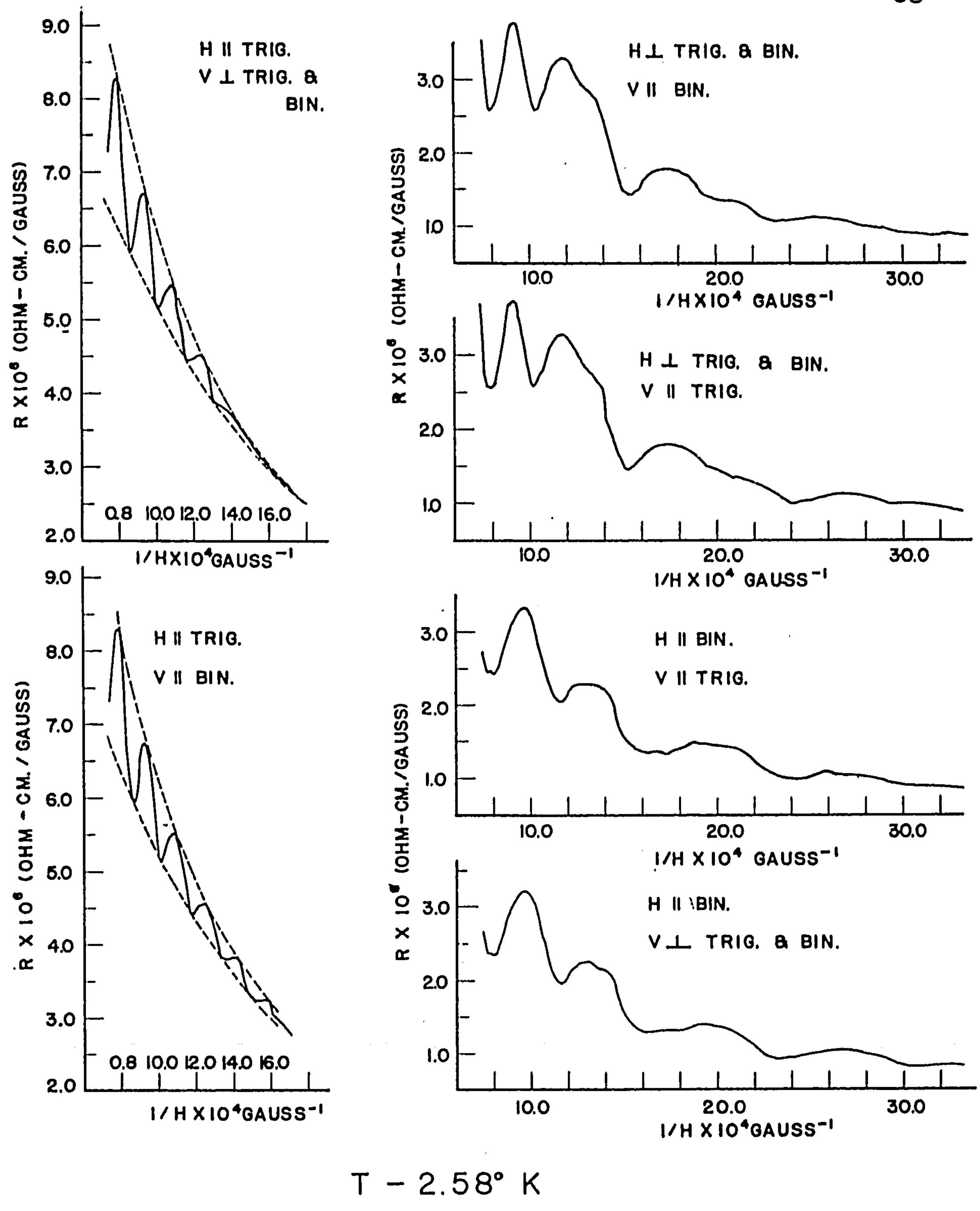
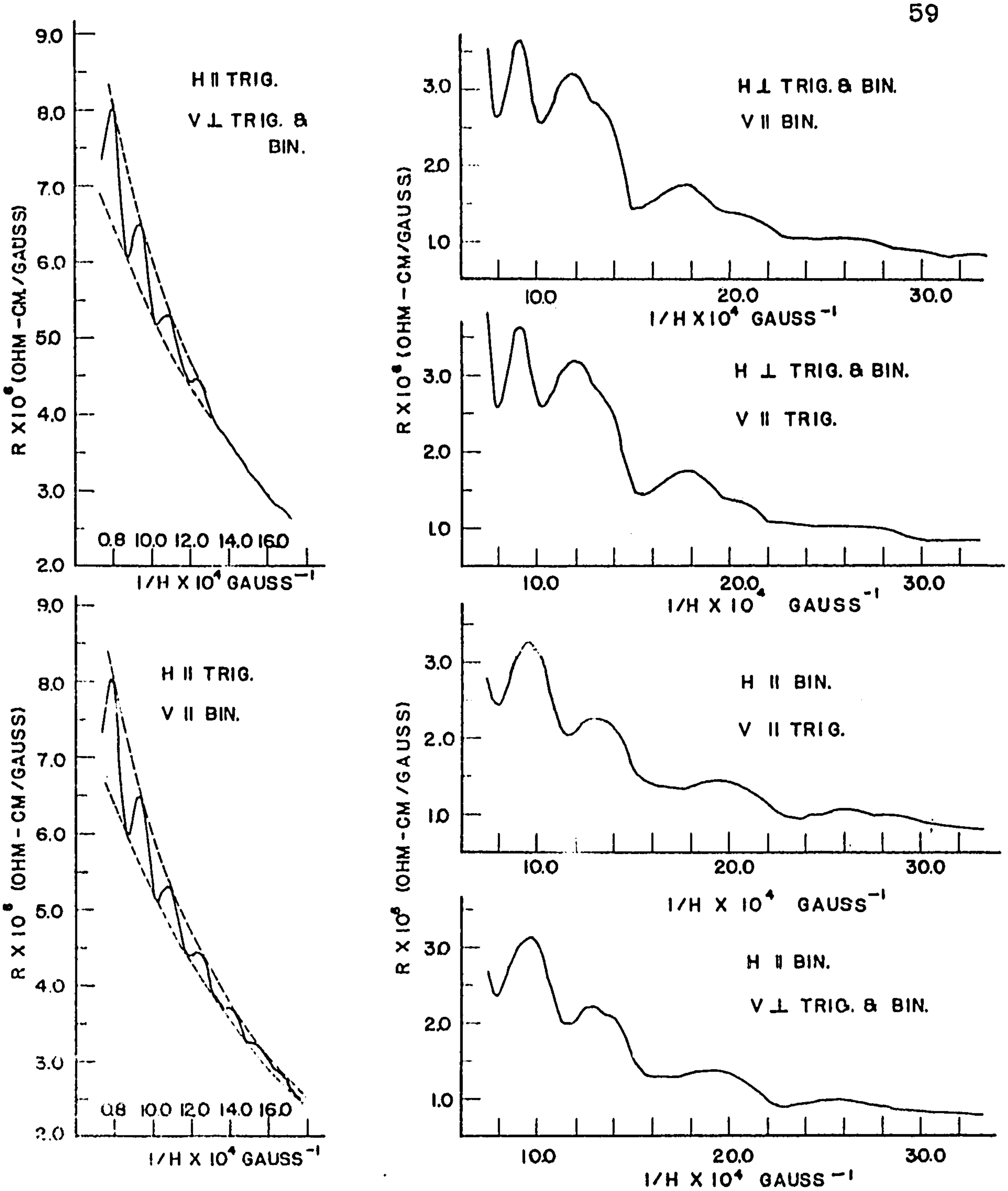

H ∥ TRIG.
V ⊥ TRIG. & BIN.
H ⊥ TRIG. & BIN.
V ∥ BIN.
H ⊥ TRIG. & BIN.
V ∥ TRIG.
H ∥ TRIG.
V ∥ BIN.
H ∥ BIN.
V ∥ TRIG.
H ∥ BIN.
V ⊥ TRIG. & BIN.
R X 10⁶ (OHM - CM / GAUSS)
1/H X 10⁴ GAUSS⁻¹
T - 2.21° K

Figure 30.



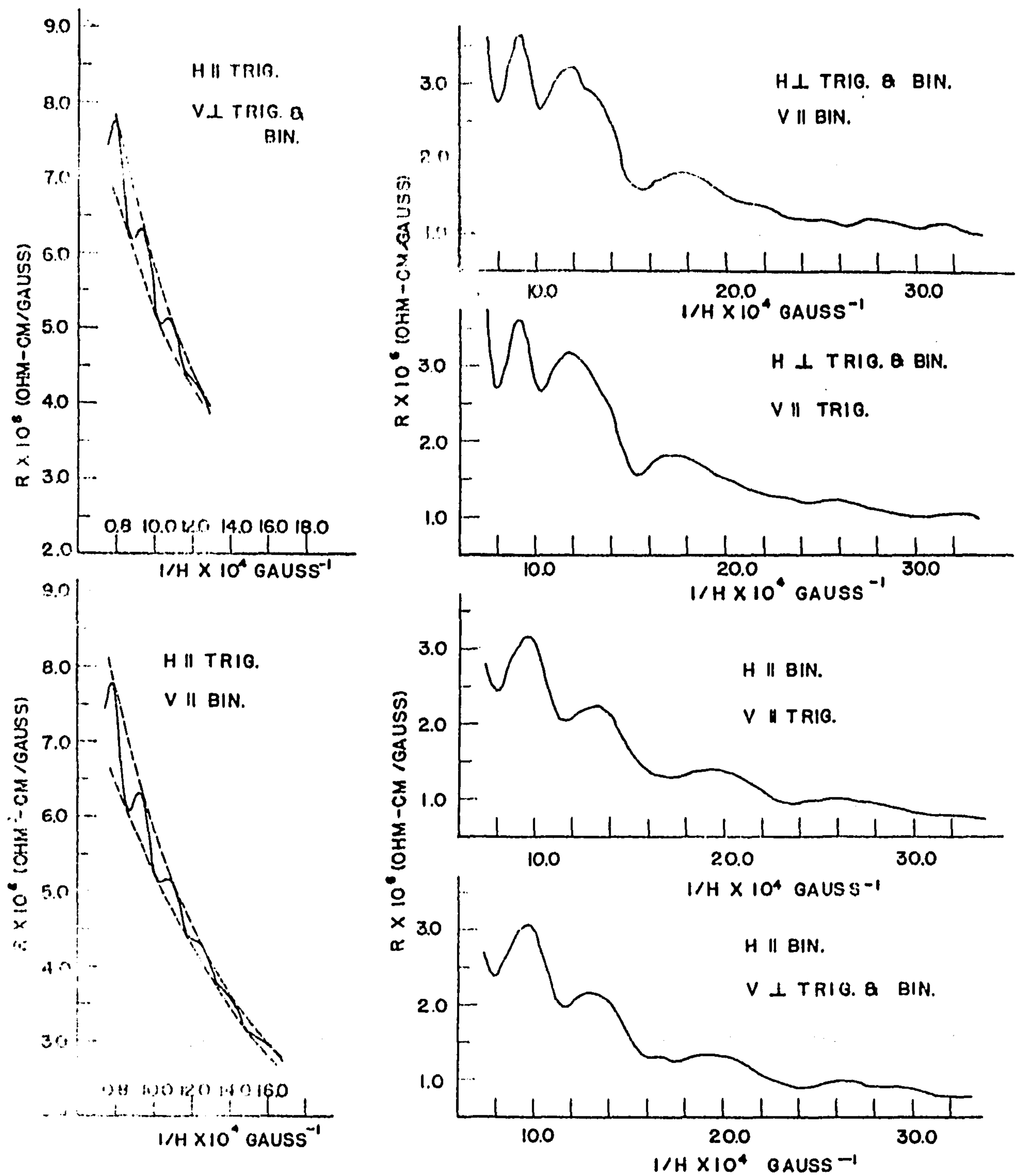
T - 2.58° K

Figure 31.



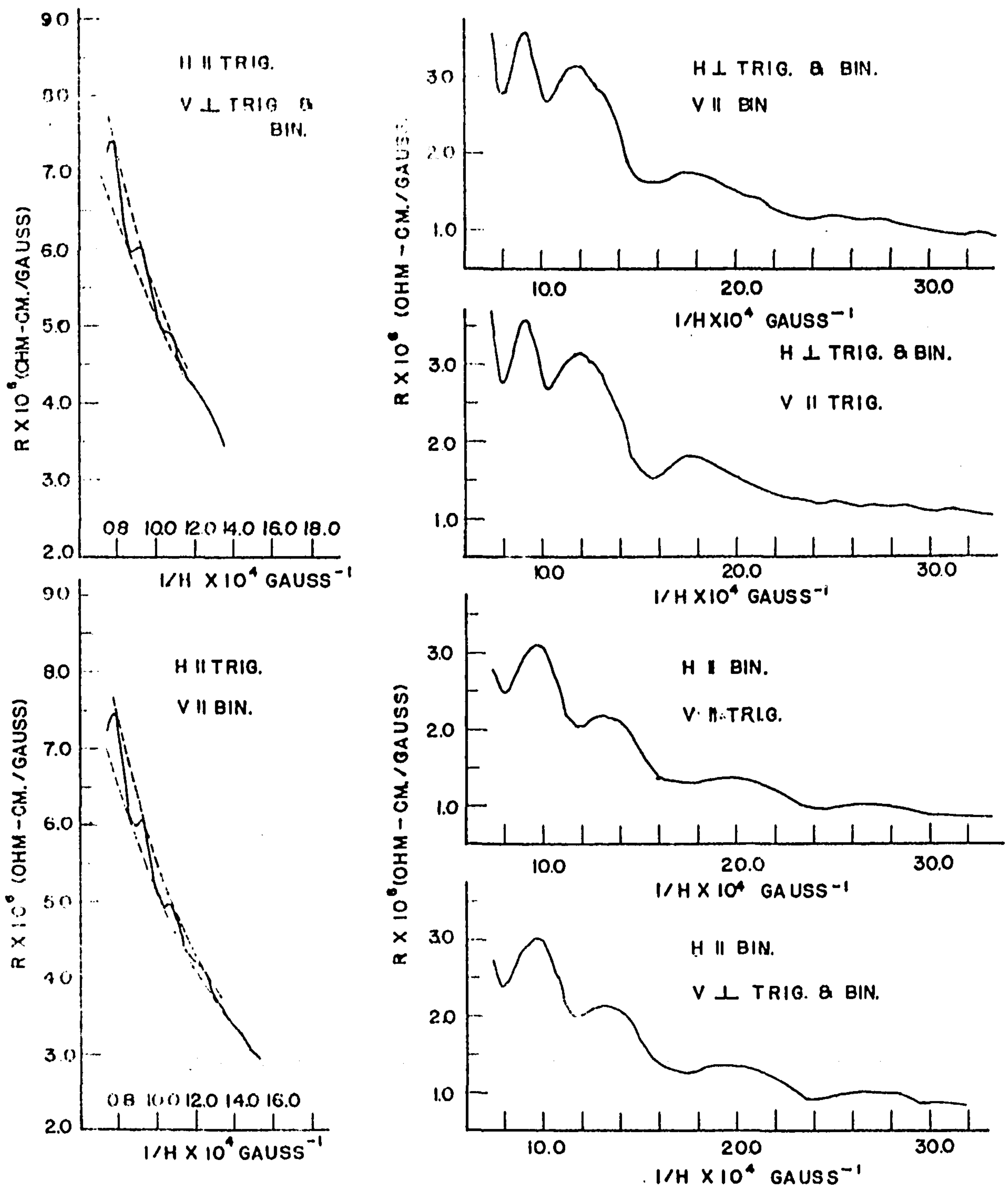
T - 3.15° K

Figure 32.



T — 3.71°K

Figure 33.



T – 4.2° K

Figure 34.

CHAPTER V

THE HALL COEFFICIENT CURVES

The calculated Hall coefficients are all negative. This means there is an excess of electron over "hole" carriers in the crystal. In general, the Hall coefficient oscillates about a curve which appears to be a monotonic function of the reciprocal field. The amplitudes of these oscillations increase as the temperature and the reciprocal field decreases. Within the limits of experimental error, a 90° rotation of the measuring probes has little, if any, effect upon the oscillations. On the other hand, their character changes dramatically with the orientation of the field. This is first observed in the graphs of the experimental data, Figures Seven through Twenty-seven; and, again, in the calculated curves, Figures Twenty-eight through Thirty-four. An examination of these curves reveals that for a particular orientation of the field, the maxima and minima of the oscillations always occur at the same field (or reciprocal field) values regardless of the arrangement of the Hall and current probes.

The periodicities and phases of the oscillations are independent of the temperature. Although the amplitudes of the oscillations are less pronounced at the higher temperatures, a specific maxima or minima is always found at the same value of field or reciprocal field strength.

The simplest of the oscillatory Hall coefficient curves are those calculated from the data obtained with the magnetic field parallel to the trigonal axis. Here, the coefficient appears to be represented by a single oscillating term, periodic in 1/H, superimposed upon another term which decreases monotonically with the reciprocal field. To determine the periodicity of the oscillations, the reciprocal field values at the points of tangency of the oscillatory curve with its envelope were plotted against successive integers. Twice the slope of the straight line drawn through these points is the period. A graph was drawn for each orientation of the measuring probes. These appear in Figure Thirty-five. The reciprocal field values of the maxima (odd integers) and the minima (even integers) for all seven temperatures are plotted on the same graph. The two graphs show further that the period of the oscillatory Hall effect is independent of the temperature and the orientation of the Hall voltage and current probes. The slope of each curve is 0.76×10^{-5} gauss^{-1} indicating a periodicity of 1.5×10^{-5} gauss^{-1}. Reynolds *et al.*[33] reported finding the same period in this crystal at the same field orientation. The value compares favorably with that found by Overton and

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[33] Reynolds, Hemstreet, Leinhardt, and Triantos, *op. cit.*, 1207.

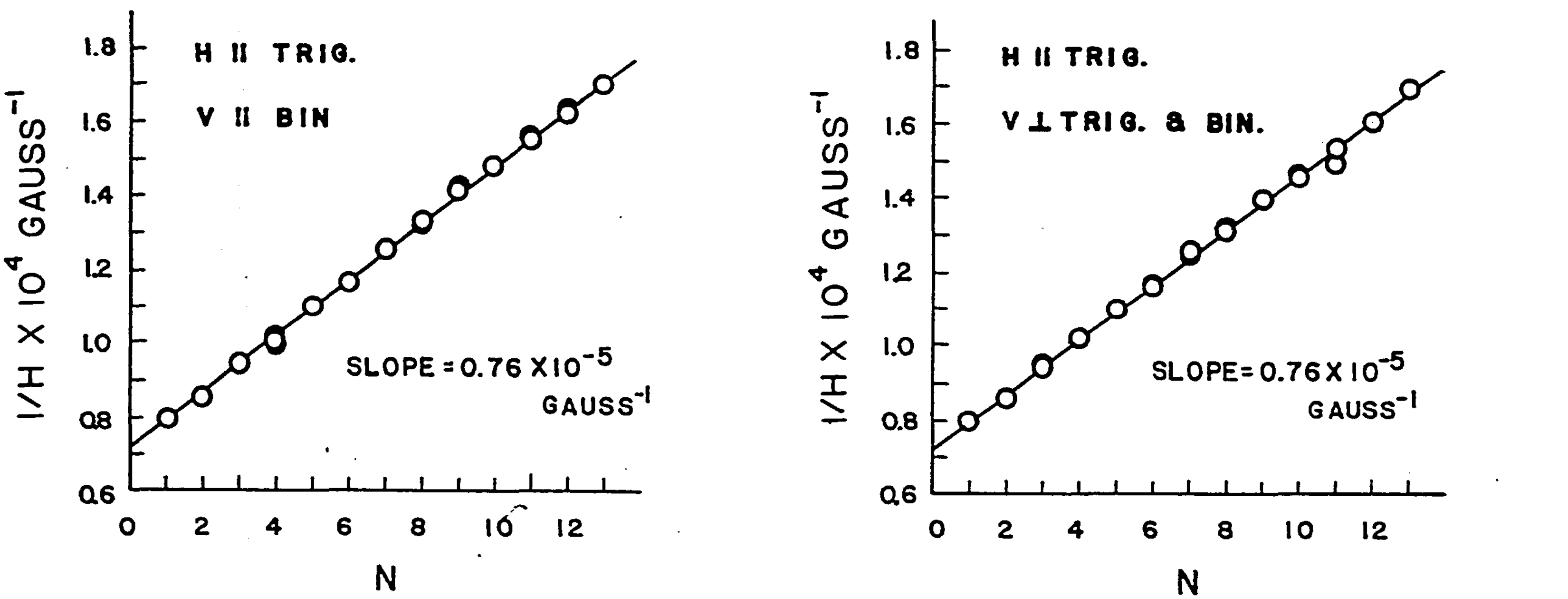
H ∥ TRIG.
V ∥ BIN
SLOPE = 0.76 X 10^-5 GAUSS^-1
1/H X 10^4 GAUSS^-1
N
H ∥ TRIG.
V ⊥ TRIG. & BIN.
SLOPE = 0.76 X 10^-5 GAUSS^-1
1/H X 10^4 GAUSS^-1
N

Figure 35.

Berlincourt[34] in another crystal whose trigonal axis was parallel to the magnetic field.

The Hall coefficient curves have a much greater complexity when they are calculated from measurements made with the magnetic field parallel to the other axes of the crystal. The periodicities of the observed oscillations could not be found by the simple method outlined above. Hence, a graphical method of analysis was used. Figure Thirty-six illustrates this method. It is assumed that the coefficient curves at these orientations contain a number of oscillating terms. The approximate field values at which their maxima occur were found. Then, those values having equal intervals in gauss^{-1} between them were assumed to belong to the same oscillating term. These were plotted against successive integers and the slope of the resulting straight line curve was taken to be the period of that particular term. The axes of the graphs were adjusted so that the zero of the axis of integers coincided with the zero of the 1/H axis. An approximate value of the phase of the different oscillations is given by the intercept of the straight lines with the axis of integers.

For those measurements made with the magnetic field parallel to a binary axis of the crystal, the following

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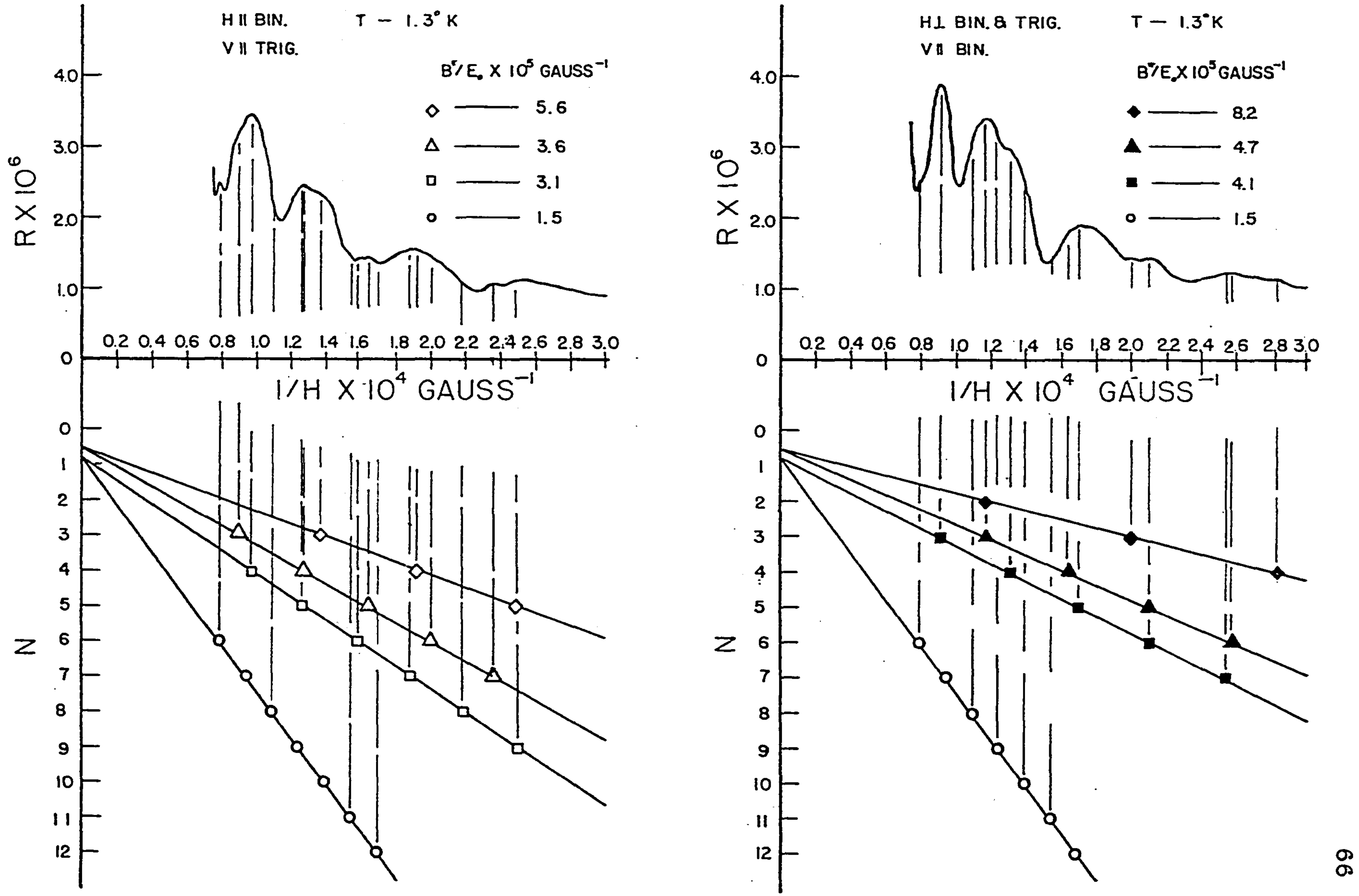
[34] W. C. Overton, Jr. and T. G. Berlincourt, Phys. Rev., 99, 1165 (1955).



H ∥ BIN.
V ∥ TRIG.
T — 1.3° K
B″/E₀ X 10⁵ GAUSS⁻¹
5.6
3.6
3.1
1.5
R X 10⁶
1/H X 10⁴ GAUSS⁻¹
N
H ⊥ BIN. & TRIG.
V ∥ BIN.
T — 1.3° K
B″/E₀ X 10⁵ GAUSS⁻¹
8.2
4.7
4.1
1.5
R X 10⁶
1/H X 10⁴ GAUSS⁻¹
N

Figure 36.

periods were found: 5.6×10^{-5} gauss^{-1}, 3.6×10^{-5} gauss^{-1}, and 3.1×10^{-5} gauss^{-1}. With the field perpendicular to the trigonal and binary axes, the periods are: 8.2×10^{-5} gauss^{-1}, 4.7×10^{-5} gauss^{-1}, and 4.1×10^{-5} gauss^{-1}. It is possible that each of these curves possesses another oscillating term which has the same periodicity and phase as that found with the field parallel to the trigonal axis. For both orientations the two oscillating terms having the longer periods have the same phase, about 0.6. The phase of the two shorter periods is nearly 0.8.

It is interesting to compare the periodicities determined by this method with those found by others in related magneto-oscillatory phenomena. Alers and Webber[35] observed that, with the field perpendicular to the trigonal and a binary axis, there are two oscillating terms in the magneto-resistance of a bismuth single crystal. Their report indicates the periods are 8.2×10^{-5} gauss^{-1} and 4.1×10^{-5} gauss^{-1}. These values agree with two of the periods found in the Hall coefficient at this orientation. Steele and Babiskin[36] were unable to determine the periodicity of the phenomena they studied in a bismuth single crystal having this orientation. However, they found a period of 7.1×10^{-5} gauss^{-1} in the oscillations of thermal

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[35] Alers and Webber, op. cit., 1065.

[36] Steele and Babiskin, op. cit., 364.

conductivity, thermoelectric power, and resistance in a magnetic field parallel to a binary axis and perpendicular to the trigonal axis. No such value was found at this orientation by the above analysis.

CHAPTER VI

DISCUSSION

At the present time, there is no satisfactory theoretical formula describing the low temperature Hall coefficient in bismuth single crystals at the moderately high fields encountered in this investigation. It has been the practice[37], however, to analyze the Hall coefficient and other magneto-oscillatory phenomena in terms of an equation having the form:

$$R(T,H) = \sum_{j=1}^{\infty} \left\{ R_{0_j}(T,H) + A_j(T,H) \sin(2\pi E_{0j}/\beta^* H + \varphi) \right\} \quad . \qquad (1)$$

$R_0(T,H)$ is frequently found to vary with H, the magnetic field[38]. It is nearly independent of the temperature, T. $A(T,H)$ is given by:

$$A(T,H) = \text{Const.} \frac{H^q \; T}{\sinh(2\pi^2 kT/\beta^* H)} \quad . \qquad (2)$$

E_0 is the Fermi energy of the conduction electrons; B' is a double effective Bohr magneton and is equal to eh/m'; m' is the effective mass of the electrons in a plane perpendicular to the field; ϕ is the phase of the oscillations.

Equation (1) is actually a modified form of Landau's[39]

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[37]Overton and Berlincourt, op. cit., 1165.

[38]Steele and Babiskin, op. cit., 366 and Alers and Webber, op. cit., 1064.

[39]Landau, op. cit.

equation for the oscillatory diamagnetic susceptibility. His value of the exponent, a, is -3/2 and he gives $\pi/4$ as being the phase, ϕ. Allowing $\sinh(2\pi^2kT/B'H)$ to be approximated by $(1/2)\exp(2\pi^2kT/B'H)$, and a to be 1/2, equation (2) then becomes a formula derived by Grimsal[40]. In this form the equation was meant to describe the oscillatory Hall coefficient in an isotropic crystal at low temperatures and at low fields.

With the magnetic field parallel to the trigonal axis[41], a suitable expression for the Hall coefficient might well be one of the form (1); or, considering only the term in $j = 1$:

$$R(T,H) = R_0(T,H) + A(T,H)\sin(\theta - \varphi) \quad . \qquad (3)$$

However, an attempt to fit the experimental curves defining the amplitude of the oscillations to equation (2) was not successful.

If it is assumed that θ in equation (3) has the form given in equation (1), then, B'/E_0 is equal to 1.5×10^{-5} gauss^{-1}. This is the periodicity of the oscillations found in Chapter V. From his studies of the de Haas - van Alphen

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[40]E. G. Grimsal, Thesis, Louisiana State University, Unpublished (1954).

[41]This orientation was chosen because of the relative simplicity of its Hall coefficient curves.

effect in bismuth, Shoenberg[42] has determined a value for E_0 which is considered to be quite reliable. He found that it is equal to 2.9×10^{-14} erg. The product of this number and the period of the oscillations should be a fairly accurate value of B'. This is 4.4×10^{-19} erg/gauss. Writing equation (2) in logarithmic form and introducing to it this value of B', there is obtained:

$$\mathrm{Ln}(A/T) = \mathrm{Ln}(\mathrm{const.}) + \alpha\,\mathrm{Ln}(H) - \mathrm{Ln}(\sinh 6200T/H) \quad . \qquad (4)$$

Then, a plot of Ln(A/T) vs. Ln(sinh6200T/H) using experimental values of A and T should fall along a straight line. If equation (2) and B' are correct, then the slope of this line must be -1. Three graphs drawn in this manner appear in Figure Thirty-seven. Although the experimental points fall on straight line curves with little scattering, the slopes of the curves are less than -1. Furthermore, the slope varies with the different reciprocal fields which are held constant.

An approximate value of B' may be found in another way. Taking $\sinh(2\pi^2kT/B'H)$ to be close to $(1/2)\exp(2\pi^2kT/H)$, equation (4) becomes:

$$\mathrm{Ln}(A/T) = \mathrm{Ln}(\mathrm{Const.}) + \alpha\,\mathrm{Ln}(H) - CT/H \quad . \qquad (5)$$

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[42]Shoenberg, Trans. Roy. Soc., op. cit.

Graphs of the experimental values of Ln(A/T) vs. T/H at constant reciprocal fields are, within experimental error, straight line curves. Each line should have the same slope, $C = 2\pi^2 k/B'$. However, as is illustrated by Figure Thirty-eight, the slope varies with 1/H. For small values of 1/H, C is about -1×10^4 gauss/deg. As 1/H increases, C approaches -0.7×10^4 gauss/deg. The calculated values of B' vary from 2.7×10^{-19} erg/gauss to 3.4×10^{-19} erg/gauss. When these numbers are divided by the period of the oscillations, 1.5×10^{-5} gauss^{-1}, E_0 is found to range in value from 2.2×10^{-14} erg to 1.8×10^{-14} erg. The larger value is 25 percent less than that found by Shoenberg.

The variation in C may be due to the error introduced by approximating sinhCT/H with (1/2)expCT/H. This possibility was investigated in the following way. Holding the reciprocal field constant, a value of C was found which gave a slope of -1 to the curve, Ln(A/T) vs. Ln(sinhCT/H). This was repeated at several reciprocal field values. A different $C = 2\pi^2 k/B'$ was found in each case, showing that either the equation is incorrect or B' is field dependent.

Other inconsistencies are revealed when an attempt is made to evaluate the exponent <u>a</u>. The simplest way to find <u>a</u> is to plot Ln(A/T) + CT/H against Ln(H). The slope of the resulting straight line should be <u>a</u>. Here, however, this method is of doubtful value since it depends upon C.

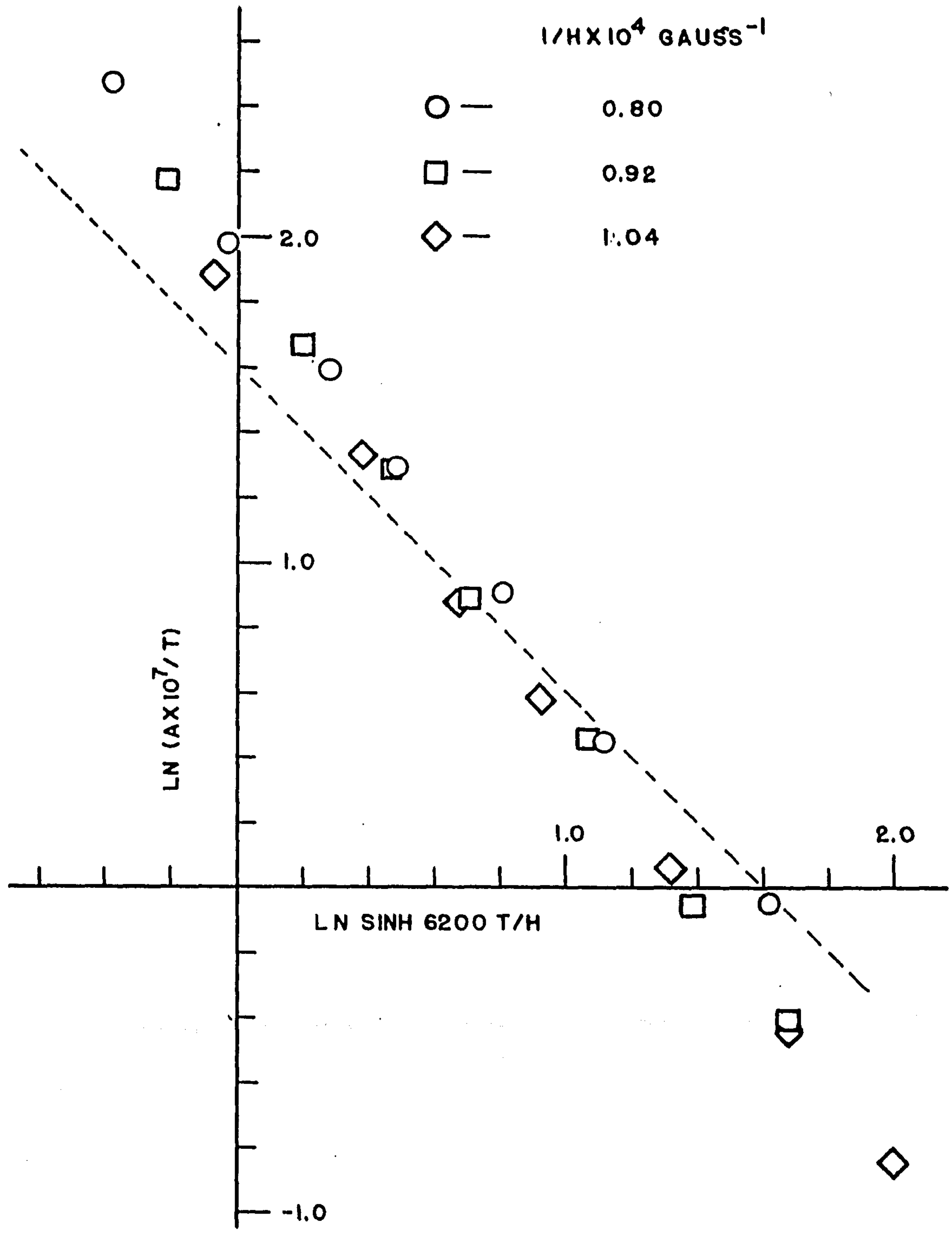
1/H X 10⁴ GAUSS⁻¹
0.80
0.92
1.04
2.0
1.0
-1.0
LN (A X 10⁷/T)
1.0
2.0
LN SINH 6200 T/H

Figure 37.

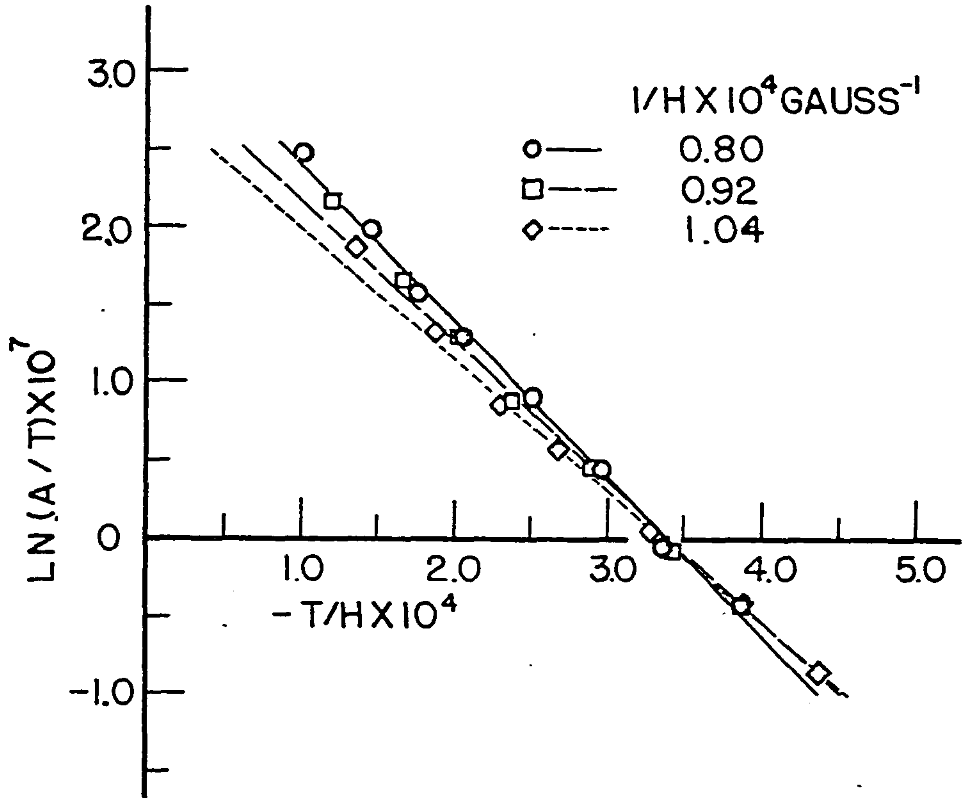
1/H X 10^4 GAUSS^-1
0.80
0.92
1.04
LN (A/T) X 10^7
-T/H X 10^4
3.0
2.0
1.0
0
-1.0
1.0
2.0
3.0
4.0
5.0

Figure 38.

Another method involves the plotting of the experimental values of $\mathrm{Ln}(A/TH^a)$ against T/H. If the proper a is selected, all the experimental points should fall upon the same curve. Taking a to be -3/2, the points fall with fair regularity upon smooth curves which are close to being straight lines. But, there is a separate curve for each temperature. With a equal to 1/2, the curves overlap to some extent, yet, waver about in an uncertain manner. Reynolds *et al.*[43] were able to reduce the scattering in a similar set of curves by using a corrected temperature, T' = T + 0.5. This correction factor was suggested by Dingle[44] for the de Haas - van Alphen effect. When the same correction was applied to the temperature in this study, no remarkable change was observed in the graphs. In their studies of the pressure dependency of the Hall coefficient in bismuth, Overton and Berlincourt[45] obtained a good fit with a equal to -2.4. This, however, was for only one temperature, 4.2°K. If the same value of a were used here, it would only serve to increase the separation of the curves.

In view of the inconsistencies discussed above,

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[43]Reynolds, Hemstreet, Leinhardt, and Triantos, *op. cit.*, 1207.

[44]R. B. Dingle, Proc. Roy. Soc., A 211, *op. cit.*, 500.

[45]Overton and Berlincourt, *op. cit.*, 1168.

equation (2) is not the equation of the amplitude of the oscillations in the low temperature Hall coefficient of bismuth single crystals. The experimental curves of $A(T,H)$ and $R_o(T,H)$ are far too complex to be fitted to the simpler empirical formulas. However, at the lower temperatures and above 9 kilo-gauss, $R_o(T,H)$ is nearly proportional to $H^{1.2}$. In this region, the non-oscillatory component is almost entirely independent of the temperature.

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APPENDIX I

CALIBRATION OF THE LEEDS AND NORTHRUP RECORDING POTENTIOMETER

The potential developed across a standard resistance was measured first by a White double potentiometer (A) and, then, by the L. and N. recording potentiometer (B).

Increasing Potential			Decreasing Potential		
A milli-volts	B milli-volts	Diff. milli-volts	A milli-volts	B milli-volts	Diff. milli-volts
0.524	0.430	0.094	4.203	4.140	0.063
1.148	1.010	0.138	3.460	3.410	0.050
1.904	1.810	0.094	2.812	2.760	0.052
2.809	2.720	0.089	1.847	1.800	0.047
3.270	3.200	0.070	1.130	1.090	0.040
3.683	3.600	0.083	0.576	0.530	0.046
4.200	4.120	0.080			
4.525	4.440	0.085			
4.903	4.820	0.083			
4.986	4.900	0.086			

Considering both sets of data, the average difference is about 0.07 milli-volt. If the recorded voltages are corrected by the addition of 0.07 milli-volt, the average deviation of the readings is about 0.02 milli-volt. If the readings whose difference is 0.138 milli-volt are excluded the maximum deviation is less than 0.05 milli-volt. The 0.138 milli-volt difference is probably due to slippage of the tape.

APPENDIX II - A

OPERATING CHARACTERISTICS OF MAGNET

A thermocouple with one of its junctions mounted between two coils, close to the forms upon which they are wound, measured a temperature of 19.5°C without water circulating through the cooling plates. With water flowing through the plates, the temperature rises 8°C.

Magnet Current Amperes	Magnet Voltage Volts	Coil Res. Ohms	Power Kilo-Watts	Temp. Deg. Cent.
0.0	0.0	1.04	0.00	27.5
3.0	3.2	1.07	0.01	28.0
4.5	5.0	1.11	0.02	28.0
10.0	11.0	1.10	0.11	28.5
15.8	17.2	1.09	0.27	29.8
20.0	21.8	1.09	0.44	31.5
26.5	29.2	1.10	0.77	35.0
30.0	33.2	1.11	1.00	37.4
37.1	41.6	1.12	1.54	43.0
44.5	50.6	1.14	2.25	49.0
49.5	57.7	1.17	2.86	55.0
55.2	65.7	1.19	3.63	60.5
60.0	72.6	1.21	4.36	66.0
66.0	81.0	1.23	5.34	71.6
72.2	91.0	1.26	6.57	77.8

Magnet Current Amperes	Magnet Voltage Volts	Coil Res. Ohms	Power Kilo-Watts	Temp. Deg. Cent.
78.5	100.5	1.28	7.89	85.0
84.5	110.2	1.31	9.31	90.4
90.0	118.6	1.32	10.68	95.4
95.0	127.5	1.34	12.11	101.6
99.9	135.3	1.36	13.50	107.2
103.0	140.4	1.36	14.46	111.8

For currents less than 60 amperes, a fifteen minute warmup was allowed. Above this current, measurements were recorded as soon as the temperature ceased to rise.

APPENDIX II - B

MAGNETIC FIELD INTENSITY

IN TERMS OF BROWN RECORDER TAPE READINGS

The values listed below are the averages of three separate field calibrations. Above 10 kilo-gauss, the average deviation of the points is about 200 gauss.

Tape (mv)	Field (gauss)	Tape (mv)	Field (gauss)	Tape (mv)	Field (gauss)
0.0	170	17.0	10,240	34.0	12,730
1.0	970	18.0	10,490	35.0	12,810
2.0	1,770	19.0	10,730	36.0	12,910
3.0	2,540	20.0	10,930	37.0	12,990
4.0	3,290	21.0	11,130	38.0	13,070
5.0	4,020	22.0	11,300	39.0	13,150
6.0	4,720	23.0	11,450	40.0	13,230
7.0	5,400	24.0	11,600	41.0	13,310
8.0	6,050	25.0	11,750	42.0	13,390
9.0	6,690	26.0	11,900	43.0	13,470
10.0	7,290	27.0	12,040	44.0	13,550
11.0	7,840	28.0	12,140	45.0	13,620
12.0	8,360	29.0	12,240	46.0	13,690
13.0	8,830	30.0	12,340	47.0	13,760
14.0	9,250	31.0	12,440	48.0	13,820
15.0	9,630	32.0	12,540	49.0	13,880
16.0	9,950	33.0	12,640	50.0	13,940

APPENDIX III

EXPERIMENTAL DATA

The recorded data are tabulated in the following pages. For each set of data, the orientation of the field, the average current, and the vapor pressure are noted. To understand the other notations, refer to Figure Two. Ootal N means that the field is directed out of the page of the diagram. Octal S means that the field is directed into the page. Hall(b+,r-) means that the black lead (right probe of M) is connected to the positive terminal of the potentiometer recording the Hall voltages. The red lead (left probe of M) is connected to the negative terminal. Current(w+,g-) means that the probes N are used as current probes, with the upper probe (white lead) having a positive polarity and the lower (green lead) a negative polarity.

Data 6/28/55: Field parallel trigonal axis; P=762 mm Hg.
Octal S; Hall(b+,r-); Current(w+,g-) = 0.0165 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
1.55	0.01	7.52	0.66	10.44	1.62	11.95	2.15	12.67	2.65
3.29	0.02	7.69	0.71	10.49	1.67	11.99	2.18	12.73	2.67
3.81	0.05	7.84	0.77	10.59	1.73	12.04	2.22	12.76	2.68
4.17	0.08	8.02	0.81	10.67	1.76	12.10	2.27	12.82	2.69
4.44	0.11	8.29	0.89	10.77	1.79	12.12	2.31	12.85	2.70
4.59	0.13	8.44	0.92	10.85	1.81	12.17	2.33	12.91	2.71
4.87	0.16	8.65	0.98	10.93	1.83	12.20	2.36	12.96	2.72
5.15	0.20	8.88	1.06	11.06	1.85	12.24	2.39	13.02	2.73
5.28	0.22	9.02	1.12	11.17	1.86	12.26	2.41	13.07	2.74
5.43	0.24	9.16	1.18	11.24	1.88	12.30	2.45	13.15	2.75
5.56	0.26	9.37	1.23	11.35	1.90	12.35	2.48	13.28	2.75
5.66	0.27	9.50	1.26	11.41	1.91	12.42	2.53	13.39	2.76
6.12	0.34	9.63	1.29	11.47	1.93	12.45	2.55	13.43	2.77
6.44	0.40	9.77	1.33	11.56	1.97	12.49	2.57	13.76	2.90
6.57	0.42	9.90	1.36	11.62	1.99	12.52	2.58		
6.72	0.46	9.96	1.39	11.69	2.02	12.56	2.60		
6.93	0.50	10.09	1.45	11.75	2.04	12.61	2.63		
7.11	0.55	10.19	1.50	11.78	2.06	12.64	2.63		
7.29	0.59	10.29	1.56	11.83	2.08	12.67	2.65		
7.40	0.62	10.34	1.59	11.87	2.11	12.73	2.67		

Data 6/28/55: Field parallel trigonal axis; P=762 mm Hg. Octal N; Hall(r+,b-); Current(w+,g-) = 0.0165 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
1.97	0.01	9.29	1.69	11.69	2.63	12.90	3.60
3.99	0.17	9.49	1.74	11.79	2.68	12.95	3.61
4.34	0.22	9.63	1.78	11.84	2.72	13.01	3.61
4.58	0.26	9.86	1.84	11.90	2.75	13.07	3.61
4.79	0.29	10.03	1.92	11.95	2.80	13.13	3.62
4.93	0.32	10.16	2.01	12.00	2.84	13.45	3.62
5.14	0.36	10.29	2.11	12.06	2.90	13.53	3.62
5.60	0.45	10.42	2.21	12.10	2.96		
5.79	0.50	10.52	2.28	12.15	3.02		
6.05	0.57	10.64	2.35	12.21	3.09		
6.38	0.65	10.75	2.40	12.28	3.18		
6.84	0.77	10.86	2.44	12.33	3.23		
7.23	0.89	10.98	2.46	12.37	3.34		
7.51	0.98	11.09	2.47	12.50	3.40		
7.68	1.09	11.13	2.48	12.58	3.45		
7.98	1.17	11.29	2.49	12.66	3.51		
8.21	1.25	11.38	2.50	12.70	3.53		
8.41	1.31	11.47	2.53	12.74	3.55		
8.70	1.43	11.53	2.55	12.80	3.57		
9.03	1.57	11.62	2.58	12.85	3.58		

Data 6/28/55: Field Parallel trigonal axis; P = 450 mm Hg. Octal S; Hall(b+,r-); current(w+,g-) = 0.0165 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
2.69	0.00	8.85	1.10	11.24	1.95	12.09	2.38	12.65	2.77
3.33	0.03	9.01	1.11	11.30	1.96	12.12	2.41	12.71	2.79
3.85	0.06	9.17	1.23	11.35	1.97	12.15	2.43	12.75	2.80
4.13	0.08	9.25	1.27	11.41	1.99	12.17	2.45	12.82	2.81
4.37	0.10	9.37	1.29	11.57	2.00	12.19	2.48	12.85	2.82
4.72	0.14	9.49	1.31	11.60	2.02	12.23	2.50	12.93	2.82
5.10	0.18	9.63	1.33	11.65	2.05	12.24	2.52	12.94	2.82
5.33	0.24	9.80	1.36	11.68	2.07	12.28	2.55	13.23	2.82
5.79	0.29	9.92	1.40	11.71	2.09	12.31	2.58	13.34	2.82
6.18	0.36	10.04	1.45	11.72	2.11	12.32	2.60	13.43	2.82
6.41	0.40	10.16	1.51	11.75	2.13	12.36	2.62	13.54	2.82
6.63	0.46	10.24	1.58	11.78	2.16	12.38	2.64	13.59	2.83
6.93	0.58	10.29	1.62	11.81	2.18	12.40	2.65	13.61	2.84
7.35	0.64	10.34	1.68	11.84	2.19	12.44	2.67	13.63	2.85
7.56	0.70	10.44	1.74	11.90	2.22	12.46	2.69	13.65	2.85
7.95	0.81	10.57	1.80	11.96	2.26	12.48	2.70		
8.26	0.88	10.64	1.90	11.99	2.28	12.51	2.72		
8.41	0.94	10.91	1.92	12.03	2.31	12.53	2.73		
8.63	1.00	11.01	1.93	12.05	2.34	12.56	2.74		
8.74	1.04	11.15	1.94	12.07	2.36	12.59	2.75		

Data 6/28/55: Field parallel trigonal axis; P = 450 mm Hg.; Octal N; Hall (r+,b-); Current(w+,g-) = 0.0165 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
2.17	0.02	9.77	1.85	11.69	2.72	12.30	3.32	12.95	3.74
2.69	0.05	9.92	1.90	11.72	2.74	12.31	3.34	13.01	3.74
3.33	0.11	9.98	1.94	11.75	2.76	12.34	3.36	13.07	3.74
4.09	0.20	10.07	1.99	11.81	2.80	12.36	3.40	13.13	3.74
4.72	0.30	10.10	2.03	11.86	2.84	12.38	3.41	13.17	3.73
5.07	0.37	10.19	2.07	11.88	2.86	12.40	3.44	13.22	3.72
5.56	0.50	10.24	2.13	11.92	2.90	12.43	3.47	13.29	3.70
6.18	0.63	10.35	2.48	11.97	2.94	12.46	3.50	13.35	3.69
6.69	0.75	10.64	2.54	12.02	2.99	12.48	3.53	13.39	3.68
6.99	0.86	10.88	2.55	12.04	3.03	12.52	3.56	13.46	3.67
7.35	0.99	11.18	2.55	12.07	3.06	12.54	3.58	13.53	3.66
7.73	1.09	11.30	2.56	12.09	3.08	12.59	3.60	13.56	3.66
7.95	1.22	11.33	2.56	12.12	3.14	12.62	3.63	13.64	3.66
8.16	1.30	11.36	2.58	12.14	3.16	12.66	3.65	13.66	3.66
8.41	1.35	11.45	2.59	12.16	3.18	12.69	3.67		
8.65	1.43	11.48	2.61	12.18	3.20	12.73	3.69		
8.92	1.55	11.54	2.63	12.19	3.22	12.78	3.71		
9.01	1.62	11.60	2.65	12.24	3.25	12.82	3.72		
9.15	1.71	11.63	2.68	12.26	3.28	12.86	3.73		
9.41	1.79	11.66	2.70	12.28	3.30	12.91	3.74		

Data 6/28/55: Field parallel trigonal axis; P = 225 mm Hg.; Octal S; Hall(b+,r-); current(w+,g-) = 0.0165 amp.

Field	Hall	Field	Hall	Field	Hall	Field	Hall	Field	Hall
k.-g.	m.v.	k.-g.	m.v.	k.-g.	m.v.	k.-g.	m.v.	k.-g.	m.v.
2.09	0.00	8.16	0.94	10.57	1.91	12.04	2.35	12.70	2.91
3.67	0.07	8.26	0.96	10.67	1.94	12.06	2.39	12.74	2.92
4.13	0.11	8.41	0.98	10.72	1.96	12.01	2.43	12.78	2.92
4.58	0.15	8.51	1.01	10.80	1.97	12.12	2.46	12.84	2.93
5.00	0.20	8.74	1.10	10.93	1.98	12.16	2.51	12.90	2.93
5.34	0.25	8.87	1.16	11.05	1.98	12.17	2.56	12.95	2.93
5.50	0.29	8.99	1.24	11.13	1.98	12.23	2.60	13.00	2.93
5.79	0.34	9.01	1.28	11.24	1.98	12.26	2.63	13.05	2.93
5.93	0.37	9.17	1.32	11.33	1.98	12.28	2.66	13.09	2.92
6.15	0.40	9.32	1.35	11.42	1.98	12.31	2.69	13.13	2.90
6.41	0.46	9.49	1.36	11.51	1.99	12.34	2.72	13.17	2.90
6.69	0.51	9.63	1.38	11.57	2.01	12.36	2.75	13.22	2.89
6.84	0.55	9.79	1.40	11.60	2.02	12.41	2.77	13.24	2.88
6.96	0.60	9.95	1.45	11.67	2.06	12.44	2.79	13.27	2.87
7.18	0.66	10.11	1.54	11.74	2.10	12.46	2.81	13.31	2.86
7.40	0.71	10.19	1.62	11.83	2.15	12.49	2.83	13.34	2.65
7.62	0.77	10.29	1.71	11.86	2.20	12.52	2.84	13.37	2.85
7.73	0.83	10.37	1.78	11.92	2.24	12.57	2.86	13.39	2.85
7.95	0.88	10.46	1.84	11.96	2.27	12.62	2.88	13.59	2.84
8.06	0.92	10.52	1.88	11.99	2.30	12.66	2.90		

Data 6/28/55: Field parallel trigonal axis; P = 225 mm Hg.
Octal N; Hall(r+,b-); current(w+,g-) = 0.0165 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
2.84	0.04	9.09	1.76	11.17	2.57	12.10	3.19	12.78	3.80
3.37	0.11	9.21	1.80	11.22	2.56	12.12	3.23	12.84	3.81
3.74	0.16	9.41	1.84	11.24	2.55	12.16	3.29	12.90	3.81
4.33	0.25	9.70	1.84	11.30	2.55	12.18	3.33	12.94	3.81
5.00	0.36	9.91	1.89	11.34	2.54	12.20	3.36	12.99	3.81
5.52	0.48	10.04	1.98	11.42	2.54	12.23	3.40	13.01	3.81
5.79	0.55	10.15	2.08	11.49	2.54	12.28	3.47	13.06	3.80
6.05	0.61	10.24	2.16	11.54	2.55	12.29	3.49	13.10	3.78
6.41	0.73	10.30	2.25	11.60	2.57	12.31	3.51	13.13	3.77
6.69	0.80	10.37	2.31	11.63	2.59	12.35	3.54	13.17	3.75
6.99	0.91	10.43	2.39	11.69	2.63	12.38	3.58	13.21	3.73
7.31	1.02	10.49	2.43	11.72	2.74	12.39	3.60	13.23	3.71
7.62	1.10	10.54	2.47	11.77	2.79	12.40	3.60	13.25	3.70
7.84	1.21	10.59	2.51	11.78	2.82	12.42	3.63	13.29	3.69
7.90	1.31	10.64	2.55	11.83	2.86	12.45	3.65	13.33	3.67
8.06	1.34	10.71	2.57	11.87	2.90	12.47	3.67	13.36	3.65
8.41	1.37	10.77	2.59	11.90	2.95	12.49	3.69	13.39	3.64
8.65	1.48	10.85	2.60	11.96	3.00	12.54	3.72	13.43	3.62
8.67	1.58	10.97	2.60	11.99	3.04	12.61	3.75	13.48	3.61
8.90	1.64	11.13	2.59	12.03	3.08	12.66	3.77	13.52	3.60
9.01	1.71	11.15	2.58	12.06	3.13	12.71	3.79	13.59	3.59

Data 6/28/55: Field parallel trigonal axis; P = 90 mm Hg.
Octal S; Hall(b+,r-); current(w+,g-) = 0.0165 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
2.84	0.00	9.89	1.40	11.72	2.04	12.66	2.99
3.23	0.02	10.01	1.46	11.77	2.08	12.71	2.99
3.81	0.06	10.13	1.54	11.83	2.12	12.78	2.99
4.20	0.10	10.16	1.61	11.86	2.15	12.85	2.99
4.76	0.16	10.25	1.70	11.90	2.19	12.91	2.99
5.27	0.24	10.34	1.80	11.94	2.24	12.94	2.98
5.66	0.30	10.39	1.85	11.98	2.29	12.97	2.98
6.05	0.38	10.47	1.91	12.02	2.34	12.99	2.96
6.51	0.49	10.54	1.95	12.05	2.47	13.02	2.95
6.94	0.57	10.62	1.99	12.07	2.51	13.07	2.94
7.17	0.66	10.77	2.03	12.12	2.56	13.10	2.92
7.55	0.72	10.89	2.03	12.14	2.60	13.13	2.92
7.84	0.82	10.97	2.03	12.17	2.65	13.16	2.90
8.05	0.94	11.05	2.00	12.20	2.69	13.18	2.88
8.36	0.97	11.13	1.99	12.24	2.73	13.23	2.86
8.65	1.03	11.18	1.98	12.28	2.77	13.26	2.85
8.74	1.10	11.24	1.96	12.32	2.81	13.30	2.83
8.94	1.24	11.35	1.94	12.36	2.85	13.34	2.80
9.05	1.30	11.45	1.94	12.42	2.89	13.36	2.79
9.18	1.36	11.54	1.94	12.48	2.92	13.41	2.78
9.45	1.38	11.60	1.96	12.54	2.94	13.45	2.76
9.64	1.38	11.68	2.00	12.60	2.96	13.53	2.75

Data 6/28/55: Field parallel trigonal axis; P = 90 mm Hg. Octal N; Hall(r+,b-); current(w+,g-) = 0.0165 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
2.69	0.05	9.49	1.89	10.97	2.69	11.98	3.01	12.56	3.88
3.48	0.13	9.56	1.89	11.01	2.68	12.00	3.15	12.60	3.90
4.26	0.24	9.63	1.87	11.06	2.65	12.03	3.10	12.66	3.92
4.86	0.35	9.72	1.86	11.09	2.64	12.06	3.15	12.74	3.94
5.34	0.45	9.89	1.87	11.13	2.63	12.07	3.19	12.82	3.95
5.79	0.55	9.95	1.90	11.21	2.60	12.09	3.23	12.87	3.95
6.12	0.64	10.01	1.95	11.23	2.58	12.12	3.28	12.95	3.94
6.54	0.78	10.07	2.01	11.26	2.56	12.14	3.33	12.97	3.94
6.75	0.85	10.12	2.07	11.30	2.53	12.16	3.36	13.01	3.92
7.08	0.98	10.16	2.13	11.33	2.53	12.19	3.40	13.04	3.90
7.29	1.04	10.24	2.20	11.39	2.52	12.20	3.44	13.07	3.89
7.62	1.10	10.27	2.25	11.45	2.51	12.22	3.48	13.11	3.85
7.90	1.28	10.29	2.31	11.54	2.51	12.24	3.51	13.12	3.85
8.01	1.35	10.33	2.36	11.61	2.53	12.26	3.54	13.13	3.84
8.22	1.38	10.34	2.40	11.65	2.55	12.28	3.58	13.17	3.82
8.60	1.41	10.39	2.44	11.69	2.58	12.30	3.61	13.20	3.80
8.74	1.53	10.40	2.48	11.72	2.61	12.32	3.65	13.23	3.77
8.84	1.62	10.49	2.54	11.75	2.64	12.35	3.68	13.26	3.74
8.94	1.71	10.54	2.58	11.79	2,67	12.38	3.71	13.30	3.71
9.01	1.76	10.58	2.62	11.81	2.70	12.40	3.75	13.35	3.66
9.05	1.80	10.64	2.65	11.84	2.73	12.44	3.78	13.40	3.63
9.10	1.84	10.73	2.68	11.87	2.78	12.47	3.80	13.43	3.61
9.25	1.89	10.85	2.70	11.92	2.95	12.50	3.84	13.48	3.59
9.35	1.90	10.93	2.70	11.95	2.97	12.52	3.85	13.53	3.56

Data 6/28/55: Field parallel trigonal; P = 41 mm Hg.; Octal S; Hall(b+,r-); current(w+,g-) = 0.0165 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
2.47	0.00	7.73	0.82	10.45	1.95	11.75	2.04	12.62	3.05
2.75	0.01	7.90	0.92	10.53	2.00	11.81	2.09	12.67	3.05
3.14	0.03	8.04	0.98	10.62	2.04	11.87	2.16	12.72	3.05
3.59	0.05	8.21	0.99	10.69	2.06	11.91	2.21	12.76	3.05
3.75	0.07	8.41	0.99	10.74	2.07	11.96	2.27	12.81	3.05
3.89	0.09	8.56	1.00	10.81	2.08	12.01	2.34	12.87	3.05
4.20	0.11	8.74	1.10	10.85	2.08	12.04	2.40	12.93	3.04
4.31	0.13	8.83	1.19	10.93	2.07	12.07	2.46	12.96	3.03
4.71	0.15	8.99	1.29	10.99	2.06	12.10	2.53	13.00	3.02
4.90	0.19	9.07	1.35	11.05	2.04	12.14	2.58	13.04	3.00
5.24	0.24	9.17	1.40	11.13	2.02	12.17	2.64	13.08	2.98
5.34	0.29	9.25	1.41	11.17	2.00	12.22	2.71	13.13	2.95
5.70	0.31	9.37	1.41	11.23	1.98	12.24	2.75	13.17	2.92
5.91	0.38	9.51	1.41	11.28	1.95	12.28	2.80	13.21	2.90
6.11	0.40	9.63	1.34	11.32	1.94	12.31	2.84	13.26	2.86
6.19	0.46	9.77	1.38	11.36	1.93	12.34	2.87	13.29	2.85
6.45	0.51	9.86	1.38	11.41	1.92	12.36	2.90	13.33	2.83
6.78	0.53	9.98	1.44	11.45	1.92	12.39	2.95	13.38	2.79
6.90	0.58	10.08	1.54	11.51	1.92	12.42	2.97	13.41	2.77
7.08	0.66	10.16	1.62	11.55	1.92	12.46	2.99	13.46	2.75
7.29	0.70	10.24	1.73	11.60	1.94	12.50	3.01	13.50	2.75
7.46	0.70	10.32	1.83	11.66	1.96	12.54	3.03	13.55	2.72
7.62	0.75	10.39	1.90	11.71	2.00	12.58	3.04		

Data 6/28/55: Field parallel trigonal axis; P = 41 mm Hg.; Octal N; Hall(r+,b-); current(w+,g-) = 0.0165 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
2.54	0.04	8.16	1.40	10.73	2.75	11.92	2.81	12.74	4.02
2.77	0.06	8.29	1.40	10.81	2.75	11.96	2.89	12.81	4.03
2.99	0.08	8.56	1.39	10.86	2.75	12.01	2.96	12.87	4.04
3.29	0.12	8.74	1.50	10.96	2.74	12.04	3.04	12.94	4.04
3.74	0.16	8.85	1.66	11.03	2.70	12.08	3.13	13.01	4.02
4.12	0.21	9.01	1.78	11.13	2.66	12.11	3.23	13.05	4.00
4.34	0.25	9.09	1.88	11.18	2.62	12.14	3.31	13.08	3.99
4.58	0.30	9.23	1.93	11.23	2.59	12.18	3.38	13.12	3.97
4.96	0.35	9.35	1.93	11.27	2.56	12.22	3.46	13.16	3.94
5.15	0.41	9.51	1.92	11.32	2.53	12.25	3.55	13.19	3.91
5.35	0.48	9.63	1.87	11.38	2.50	12.28	3.60	13.21	3.88
5.66	0.53	9.79	1.84	11.43	2.48	12.31	3.65	13.26	3.84
5.93	0.63	9.89	1.84	11.47	2.47	12.34	3.70	13.29	3.80
6.26	0.65	10.01	1.90	11.52	2.47	12.41	3.82	13.34	3.75
6.49	0.79	10.09	2.00	11.57	2.47	12.43	3.84	13.38	3.72
6.78	0.81	10.19	2.13	11.62	2.48	12.47	3.86	13.44	3.66
6.94	0.90	10.25	2.24	11.66	2.51	12.49	3.91	13.47	3.64
7.20	1.04	10.39	2.39	11.69	2.54	12.53	3.94	13.51	3.60
7.30	1.05	10.42	2.51	11.75	2.59	12.56	3.95	13.54	3.58
7.54	1.05	10.49	2.61	11.78	2.63	12.60	3.98	13.60	3.54
7.84	1.20	10.59	2.68	11.81	2.67	12.63	4.00	13.64	3.50
7.95	1.35	10.67	2.72	11.87	2.74	12.68	4.00		

Data 6/28/55: Field parallel trigonal axis; P = 20 cm Oct-oil S; Octal S; Hall (b+,r-); current (w+,g-) = 0.0165 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
2.92	0.01	8.72	1.04	10.63	2.13	11.75	1.99	12.60	3.14
3.29	0.03	8.75	1.09	10.73	2.15	11.80	2.09	12.69	3.15
3.92	0.08	8.84	1.18	10.81	2.15	11.84	2.09	12.71	3.15
4.38	0.12	8.93	1.30	10.85	2.15	11.87	2.13	12.76	3.15
4.71	0.15	9.07	1.40	10.87	2.14	11.90	2.20	12.80	3.15
5.01	0.19	9.17	1.44	10.90	2.13	12.20	2.38	12.84	3.15
5.19	0.23	9.32	1.46	10.93	2.12	12.21	2.41	12.90	3.15
5.54	0.30	9.48	1.45	10.97	2.10	12.23	2.46	12.95	3.15
5.92	0.36	9.53	1.43	11.02	2.08	12.26	2.54	13.00	3.13
6.09	0.40	9.57	1.40	11.07	2.05	12.10	2.58	13.04	3.10
6.43	0.46	9.65	1.37	11.12	2.03	12.12	2.62	13.08	3.09
6.57	0.51	9.77	1.34	11.16	2.00	12.15	2.68	13.13	3.06
6.72	0.52	9.83	1.33	11.21	1.98	12.17	2.72	13.14	3.04
7.02	0.60	9.93	1.35	11.24	1.95	12.19	2.76	13.16	3.02
7.29	0.71	9.96	1.38	11.28	1.91	12.21	2.80	13.21	3.00
7.47	0.71	10.04	1.44	11.33	1.89	12.24	2.85	13.24	2.96
7.73	0.73	10.08	1.50	11.37	1.86	12.29	2.90	13.27	2.93
7.79	0.81	10.18	1.61	11.42	1.85	12.30	2.95	13.32	2.89
7.91	0.94	10.25	1.74	11.46	1.84	12.35	3.00	13.34	2.86
8.05	1.02	10.29	1.82	11.50	1.84	12.39	3.03	13.44	2.83
8.26	1.00	10.35	1.51	11.60	1.85	12.43	3.06	13.49	2.78
8.36	1.00	10.42	1.99	11.63	1.87	12.48	3.09	13.51	2.75
8.46	0.98	10.47	2.04	11.66	1.90	12.52	3.11	13.52	2.68
8.64	0.99	10.54	2.10	11.72	1.94	12.59	3.14	13.60	2.64

Data 6/28/55: Field parallel trigonal axis; P = 20 cm Oct-oil S; Octal N; Hall (r+,b-); current (w+,g-) = 0.0165 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
2.24	0.03	8.01	1.42	10.08	1.98	11.60	2.33	12.51	3.95
2.84	0.07	8.16	1.43	10.13	2.06	11.66	2.41	12.55	3.99
3.37	0.13	8.26	1.41	10.19	2.15	11.72	2.47	12.62	4.01
3.82	0.18	8.36	1.38	10.24	2.26	11.76	2.54	12.68	4.03
4.36	0.27	8.44	1.35	10.29	2.40	11.81	2.60	12.76	4.04
4.83	0.34	8.56	1.34	10.34	2.55	11.84	2.65	12.82	4.04
5.15	0.41	8.65	1.39	10.44	2.60	11.98	2.86	12.89	4.04
5.48	0.51	8.73	1.45	10.49	2.68	12.00	2.93	12.98	4.01
5.92	0.64	8.83	1.56	10.55	2.73	12.03	3.01	13.03	4.00
6.31	0.70	8.88	1.69	10.65	2.78	12.06	3.09	13.08	3.98
6.41	0.74	8.93	1.78	10.73	2.80	12.07	3.19	13.11	3.94
6.44	0.78	9.01	1.84	10.81	2.80	12.08	3.25	13.16	3.90
6.57	0.81	9.08	1.90	10.85	2.79	12.12	3.33	13.24	3.83
6.82	0.81	9.17	1.95	10.93	2.77	12.16	3.39	13.27	3.78
7.04	0.92	9.29	1.97	10.98	2.74	12.19	3.45	13.32	3.72
7.08	1.02	9.43	1.95	11.04	2.70	12.22	3.53	13.36	3.67
7.22	1.06	9.53	1.91	11.13	2.64	12.23	3.56	13.41	3.60
7.41	1.04	9.57	1.86	11.21	2.56	12.26	3.63	13.47	3.54
7.57	1.04	9.63	1.83	11.30	2.48	12.29	3.70	13.50	3.50
7.68	1.11	9.71	1.79	11.34	2.43	12.32	3.73	13.54	3.44
7.78	1.22	9.82	1.77	11.38	2.40	12.36	3.80	13.60	3.38
7.86	1.31	9.92	1.78	11.45	2.33	12.41	3.86	13.63	3.35
7.95	1.37	10.01	1.86	11.51	2.32	12.47	3.92		

Data 6/28/55: Field parallel trigonal, P = 22 cm Octoil S; Octal S; Hall (b+,r-); current (w+,g-) = 0.0165 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
3.13	0.02	8.01	1.04	10.01	1.37	11.39	1.80	12.38	3.10
3.44	0.05	8.16	1.04	10.07	1.50	11.45	1.77	12.42	3.14
3.88	0.09	8.27	1.02	10.13	1.57	11.50	1.77	12.54	3.17
4.30	0.12	8.47	0.97	10.22	1.75	11.53	1.76	12.57	3.20
4.72	0.18	8.51	0.95	10.31	1.93	11.60	1.77	12.67	3.21
5.07	0.24	8.66	1.00	10.41	2.07	11.65	1.81	12.76	3.21
5.53	0.31	8.75	1.14	10.47	2.12	11.71	1.88	12.81	3.22
5.66	0.32	8.83	1.22	10.54	2.15	11.75	1.92	12.84	3.21
5.92	0.40	8.91	1.30	10.59	2.18	11.80	1.99	12.86	3.20
6.18	0.41	8.96	1.36	10.64	2.20	11.84	2.05	12.59	3.20
6.38	0.50	9.04	1.41	10.73	2.20	11.97	2.26	12.96	3.18
6.51	0.54	9.09	1.46	10.81	2.20	12.01	2.33	12.98	3.16
6.52	0.54	9.17	1.50	10.86	2.20	12.05	2.40	13.07	3.14
6.69	0.53	9.25	1.50	10.93	2.18	12.08	2.46	13.11	3.12
6.93	0.56	9.32	1.50	10.97	2.14	12.09	2.53	13.19	3.07
7.05	0.69	9.43	1.49	11.03	2.12	12.13	2.60	13.27	3.00
7.17	0.72	9.49	1.47	11.07	2.09	12.16	2.67	13.33	2.93
7.23	0.74	9.54	1.44	11.13	2.05	12.17	2.72	13.37	2.86
7.35	0.73	9.56	1.41	11.17	2.00	12.18	2.77	13.42	2.80
7.41	0.70	9.63	1.38	11.21	1.98	12.19	2.80	13.44	2.73
7.58	0.70	9.70	1.34	11.24	1.94	12.20	2.87	13.49	2.66
7.68	0.75	9.76	1.31	11.27	1.91	12.22	2.90	13.54	2.61
7.73	0.85	9.82	1.30	11.30	1.88	12.26	2.95	13.59	2.55
7.84	0.93	9.89	1.30	11.33	1.85	12.30	3.00	13.62	2.54
7.95	1.00	9.95	1.33	11.36	1.83	12.41	3.05		

Data 6/28/55: Field parallel trigonal, P = 2.2 cm Octoil S; Octal N; Hall (r+,b-); current (w+,g-) = 0.0165 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
2.26	0.03	7.62	1.04	9.63	1.84	11.29	2.42	12.22	3.75
2.69	0.05	7.79	1.22	9.70	1.77	11.36	2.35	12.27	3.83
3.14	0.10	7.85	1.40	9.77	1.73	11.39	2.33	12.36	3.91
3.59	0.15	7.96	1.48	9.83	1.72	11.45	2.30	12.41	3.95
3.95	0.19	8.11	1.49	9.89	1.72	11.54	2.28	12.48	4.00
4.30	0.24	8.21	1.46	10.01	1.86	11.61	2.29	12.53	4.03
4.58	0.29	8.27	1.41	10.07	1.96	11.63	2.31	12.63	4.08
4.86	0.35	8.37	1.35	10.13	2.10	11.69	2.34	12.73	4.10
5.15	0.43	8.46	1.31	10.34	2.75	11.72	2.38	12.81	4.11
5.40	0.48	8.57	1.31	10.36	2.80	11.78	2.43	12.93	4.11
5.67	0.52	8.66	1.41	10.39	2.84	11.79	2.49	12.98	4.11
5.99	0.66	8.74	1.53	10.55	2.86	11.84	2.60	13.04	4.10
6.25	0.65	8.83	1.66	10.67	2.87	11.86	2.74	13.08	4.06
6.44	0.79	8.89	1.77	10.77	2.86	11.88	2.85	13.15	4.03
6.67	0.85	8.93	1.88	10.83	2.82	11.91	2.95	13.21	3.97
6.69	0.83	9.01	1.96	10.89	2.79	11.99	3.19	13.29	3.88
6.81	0.80	9.09	2.00	10.97	2.75	12.03	3.30	13.35	3.78
6.93	0.90	9.18	2.04	11.09	2.70	12.06	3.38	13.41	3.66
7.12	1.06	9.33	2.03	11.12	2.65	12.09	3.45	13.47	3.58
7.23	1.11	9.41	2.00	11.15	2.59	12.14	3.53	13.54	3.47
7.34	1.09	9.49	1.95	11.20	2.52	12.16	3.60	13.62	4.33
7.51	1.03	9.56	1.89	11.27	2.46	12.18	3.66	13.68	4.26

Data 6/28/55: Field parallel trigonal axis; P = 762 mm Hg.; Octal N; Hall (w+,g-); current (b+,r-) = 0.0165 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
2.54	0.00	11.59	1.94	12.70	2.70
3.95	0.07	11.61	1.97	12.76	2.73
4.76	0.15	11.71	2.00	12.84	2.75
5.40	0.24	11.80	2.04	12.89	2.77
6.05	0.35	11.92	2.12	12.94	2.78
6.69	0.46	11.96	2.14	13.00	2.79
7.29	0.65	12.04	2.19	13.06	2.80
8.21	0.88	12.10	2.25	13.12	2.80
8.65	0.98	12.15	2.30	13.17	2.80
8.97	1.10	12.18	2.34	13.23	2.81
9.21	1.22	12.22	2.36	13.25	2.81
9.51	1.28	12.25	2.40	13.62	2.84
9.79	1.34	12.30	2.44	13.69	2.86
9.95	1.39	12.32	2.46		
10.16	1.49	12.38	2.50		
10.32	1.59	12.44	2.54		
10.67	1.77	12.50	2.59		
10.81	1.83	12.56	2.63		
10.97	1.88	12.61	2.66		
11.10	1.88	12.66	2.69		

Data 6/28/55: Field parallel trigonal axis; P = 762 mm Hg.; Octal S; Hall (g+,w-); current (b+,r-) = 0.0165 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
2.39	0.02	8.70	1.41	11.55	2.63	12.92	3.56
3.33	0.09	8.85	1.50	11.64	2.68	12.99	3.57
3.82	0.15	9.01	1.58	11.73	2.74	13.10	3.57
4.30	0.22	9.11	1.63	11.81	2.79	13.20	3.57
4.72	0.29	9.33	1.70	11.90	2.88	13.28	3.57
5.15	0.37	9.49	1.73	11.98	2.93	13.40	3.51
5.41	0.43	9.77	1.78	12.06	3.01	13.49	3.58
5.66	0.48	9.83	1.82	12.12	3.08	13.55	3.59
5.82	0.53	9.98	1.88	12.18	3.15	13.62	3.62
6.12	0.58	10.16	1.97	12.28	3.22	13.68	3.64
6.44	0.66	10.24	2.05	12.35	3.28	13.69	3.66
6.75	0.75	10.32	2.12	12.40	3.33		
6.99	0.84	10.44	2.21	12.47	3.38		
7.29	0.93	10.54	2.28	12.52	3.42		
7.40	1.00	10.59	2.92	12.59	3.45		
7.84	1.12	11.09	2.48	12.64	3.49		
7.92	1.21	11.21	2.49	12.69	3.51		
8.19	1.26	11.30	2.52	12.74	3.53		
8.36	1.30	11.37	2.55	12.80	3.54		
8.53	1.36	11.47	2.58	12.86	3.55		

Data 6/28/55: Field parallel trigonal axis; P = 450 mm Hg.; Octal N; Hall (w+,g-); current (b+,r-) = 0.0165 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
2.56	0.00	9.25	1.28	10.89	1.94	12.01	2.23	12.56	2.75
4.02	0.09	9.27	1.30	10.97	1.94	12.04	2.25	12.58	2.76
4.68	0.15	9.37	1.32	11.05	1.99	12.06	2.28	12.60	2.78
5.10	0.21	9.53	1.34	11.13	1.94	12.10	2.31	12.64	2.79
5.41	0.26	9.62	1.35	11.27	1.94	12.11	2.34	12.67	2.80
5.89	0.34	9.73	1.36	11.36	1.94	12.12	2.35	12.70	2.81
6.18	0.39	9.84	1.39	11.38	1.94	12.14	2.36	12.73	2.83
6.50	0.45	9.95	1.43	11.44	1.95	12.16	2.39	12.78	2.85
6.81	0.52	10.02	1.46	11.48	1.96	12.20	2.43	12.82	2.86
7.02	0.58	10.17	1.54	11.53	1.97	12.22	2.45	12.85	2.86
7.29	0.65	10.23	1.57	11.60	1.99	12.23	2.47	12.88	2.87
7.61	0.72	10.28	1.63	11.64	2.01	12.24	2.49	12.91	2.88
7.73	0.78	10.34	1.67	11.70	2.04	12.28	2.51	12.96	2.88
7.92	0.85	10.39	1.72	11.75	2.06	12.30	2.54	13.00	2.88
8.06	0.90	10.44	1.75	11.77	2.08	12.33	2.57	13.07	2.88
8.26	0.94	10.49	1.77	11.81	2.09	12.34	2.59	13.22	2.88
8.45	0.98	10.54	1.80	11.84	2.11	12.38	2.61	13.29	2.88
8.65	1.09	10.59	1.84	11.89	2.14	12.40	2.64	13.33	2.88
8.76	1.09	10.69	1.88	11.90	2.15	12.42	2.65	13.37	2.88
8.83	1.10	10.75	1.90	11.93	2.17	12.44	2.67	13.62	2.87
8.93	1.18	10.79	1.91	11.95	2.15	12.48	2.70		
9.07	1.22	10.84	1.92	11.97	2.20	12.52	2.73		

Data 6/28/55: Field parallel trigonal axis; P = 450 mm Hg.; Octal S; Hall (g+,w-); current (b+,r-)= 0.0165 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
2.09	0.03	7.17	0.96	9.83	1.88	11.30	2.54		
2.54	0.05	7.32	1.00	9.89	1.93	11.40	2.55		
2.91	0.08	7.45	1.03	10.01	1.98	11.45	2.56		
3.15	0.10	7.57	1.06	10.13	2.05	11.50	2.57		
3.44	0.13	7.62	1.10	10.16	2.09	11.54	2.99		
3.67	0.16	7.73	1.14	10.22	2.13	11.55	2.60		
3.98	0.19	7.84	1.20	10.25	2.15	11.60	2.62		
4.25	0.24	7.90	1.25	10.27	2.18	11.63	2.64		
4.51	0.28	8.06	1.29	10.29	2.22	11.66	2.65		
4.72	0.32	8.21	1.32	10.34	2.27	11.69	2.67		
5.00	0.37	8.36	1.35	10.40	2.31	11.73	2.69		
5.14	0.40	8.49	1.39	10.45	2.36	11.75	2.71		
5.27	0.43	8.65	1.45	10.49	2.39	11.79	2.75		
5.46	0.47	8.74	1.50	10.55	2.43	11.82	2.77		
5.66	0.52	8.83	1.56	10.59	2.45	11.87	2.81		
5.92	0.58	8.85	1.62	10.64	2.46	11.90	2.85		
6.15	0.63	8.94	1.67	10.69	2.49	11.95	2.89		
6.31	0.68	9.03	1.70	10.73	2.50	11.99	2.93		
6.60	0.75	9.09	1.74	10.80	2.52	12.02	2.96		
6.78	0.80	9.25	1.76	10.85	2.53	12.04	2.98		
6.81	0.84	9.41	1.80	10.93	2.54	12.05	3.00		
6.90	0.90	9.56	1.81	11.05	2.54	12.07	3.03		
7.05	0.91	9.74	1.84	11.19	2.54	12.09	3.06		

Data 6/28/55: Field parallel trigonal axis; P = 450 mm Hg.; Octal S; Hall (g+,w-); current (b+,r-) = 0.0165 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
12.12	3.10	12.37	3.43	12.65	3.65	13.17	3.68
12.14	3.13	12.38	3.44	12.69	3.66	13.20	3.68
12.16	3.16	12.40	3.46	12.71	3.67	13.25	3.66
12.18	3.19	12.42	3.48	12.74	3.68	13.28	3.66
12.22	3.24	12.45	3.51	12.78	3.69	13.31	3.65
12.24	3.27	12.48	3.54	12.80	3.70	13.34	3.65
12.26	3.30	12.50	3.55	12.87	3.70	13.36	3.64
12.28	3.32	12.52	3.56	12.94	3.70	13.45	3.63
12.29	3.33	12.54	3.59	12.98	3.70	13.65	3.64
12.31	3.36	12.57	3.60	13.04	3.70		
12.33	3.39	12.60	3.61	13.09	3.70		
12.35	3.41	12.62	3.63	13.13	3.69		

Data 6/28/55: Field parallel trigonal axis; P = 225 mm Hg.; Octal N; Hall (w+,g-); current (b+,r-) = 0.0165 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
2.09	0.00	9.52	1.36	11.72	2.03	12.52	2.85
3.29	0.04	9.70	1.37	11.78	2.06	12.56	2.86
4.03	0.09	9.90	1.41	11.84	2.10	12.60	2.88
4.58	0.14	10.06	1.50	11.87	2.13	12.63	2.90
5.07	0.20	10.14	1.56	11.92	2.16	12.69	2.91
5.34	0.25	10.24	1.61	11.97	2.21	12.73	2.93
5.41	0.31	10.29	1.67	12.01	2.24	12.79	2.94
6.05	0.38	10.34	1.74	12.04	2.27	12.86	2.95
6.25	0.43	10.44	1.81	12.08	2.38	12.94	2.95
6.57	0.49	10.49	1.85	12.10	2.40	13.01	2.95
6.81	0.54	10.59	1.91	12.12	2.44	13.05	2.95
7.05	0.63	10.66	1.95	12.14	2.96	13.10	2.94
7.29	0.67	10.77	1.98	12.12	2.50	13.12	2.93
7.63	0.76	10.89	1.99	12.20	2.54	13.17	2.92
7.85	0.85	11.01	1.99	12.24	2.58	13.20	2.91
8.11	0.94	11.19	1.98	12.26	2.61	13.23	2.90
8.37	0.97	11.27	1.96	12.28	2.65	13.27	2.89
8.71	1.05	11.33	1.96	12.30	2.67	13.29	2.88
8.83	1.14	11.40	1.95	12.34	2.70	13.34	2.86
9.01	1.24	11.46	1.95	12.38	2.74	13.40	2.85
9.11	1.29	11.57	1.96	12.43	2.77	13.47	2.84
9.25	1.34	11.63	1.98	12.46	2.80	13.57	2.83
9.41	1.36	11.66	2.00	12.48	2.83		

Data 6/28/55: Field parallel trigonal axis; P = 225 mm Hg.; Octal S; Hall (g+,w-); current (b+,r-) = 0.0165 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
2.85	0.08	8.99	1.69	10.81	2.59	12.04	3.10	12.73	3.80
3.37	0.12	9.07	1.75	10.93	2.59	12.06	3.13	12.80	3.80
3.74	0.16	9.16	1.80	11.05	2.59	12.08	3.16	12.86	3.80
4.33	0.26	9.21	1.81	11.09	2.58	12.10	3.19	12.91	3.80
4.87	0.36	9.33	1.83	11.16	2.56	12.12	3.22	12.93	3.80
5.33	0.44	9.53	1.84	11.22	2.55	12.14	3.27	12.95	3.79
5.73	0.53	9.77	1.84	11.28	2.54	12.17	3.32	13.00	3.78
5.93	0.60	9.83	1.86	11.40	2.54	12.22	3.36	13.02	3.77
6.32	0.70	9.93	1.91	11.51	2.54	12.23	3.41	13.05	3.75
6.51	0.77	10.01	1.96	11.57	2.56	12.26	3.46	13.09	3.74
6.84	0.85	10.13	2.05	11.60	2.58	12.29	3.51	13.13	3.72
7.06	0.95	10.19	2.11	11.67	2.62	12.31	3.53	13.17	3.76
7.29	1.00	10.24	2.18	11.72	2.66	12.34	3.56	13.21	3.68
7.35	1.04	10.29	2.25	11.75	2.69	12.37	3.60	13.23	3.67
7.62	1.11	10.35	2.33	11.81	2.73	12.42	3.64	13.25	3.66
7.85	1.25	10.42	2.39	11.84	2.86'	12.46	3.68	13.28	3.65
8.00	1.30	10.46	2.44	11.87	2.90'	12.48	3.70	13.34	3.62
8.17	1.34	10.53	2.49	11.90	2.94'	12.54	3.74	13.36	3.61
8.45	1.36	10.59	2.52	11.95	2.99'	12.58	3.75	13.39	3.60
8.66	1.45	10.66	2.55	12.00	3.05'	12.63	3.78	13.43	3.58
8.83	1.58	10.73	2.58	12.03	3.07	12.68	3.79	13.55	3.57

' Chart slippage.

Data 6/28/55: Field parallel trigonal axis; P = 90 mm Hg.; Octal N; Hall (w+,g-); current (b+,r-) = 0.0165 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
2.47	0.00	8.63	1.09	11.17	2.02	12.16	2.52	12.92	3.05
2.84	0.01	8.83	1.19	11.21	2.00	12.18	2.56	12.95	3.05
3.44	0.05	9.01	1.31	11.24	1.99	12.22	2.60	12.99	3.05
3.91	0.09	9.11	1.38	11.27	1.98	12.24	2.65	13.01	3.04
4.30	0.13	9.26	1.40	11.33	1.96	12.26	2.67	13.03	3.03
4.59	0.17	9.45	1.40	11.37	1.95	12.28	2.70	13.05	3.03
4.93	0.21	9.60	1.40	11.42	1.94	12.30	2.73	13.09	3.00
5.27	0.25	9.70	1.39	11.47	1.94	12.34	2.81	13.11	3.00
5.53	0.30	9.80	1.39	11.51	1.94	12.35	2.83	13.14	2.99
5.79	0.35	9.98	1.95	11.56	1.94	12.36	2.84	13.17	2.98
5.93	0.40	10.10	1.56	11.61	1.95	12.40	2.86	13.21	2.97
6.25	0.45	10.24	1.67	11.66	1.97	12.42	2.89	13.23	2.95
6.44	0.50	10.29	1.77	11.71	2.00	12.44	2.90	13.29	2.93
6.63	0.52	10.34	1.85	11.75	2.03	12.48	2.93	13.33	2.91
6.81	0.55	10.47	1.93	11.81	2.06	12.52	2.95	13.35	2.89
6.89	0.60	10.51	1.98	11.86	2.11	12.54	2.97	13.37	2.88
7.05	0.69	10.60	2.01	11.90	2.17	12.59	2.99	13.39	2.87
7.23	0.70	10.69	2.04	11.95	2.21	12.63	3.00	13.41	2.85
7.40	0.73	10.73	2.05	11.99	2.25	12.66	3.02	13.45	2.85
7.68	0.82	10.81	2.06	12.02	2.30	12.72	3.03	13.46	2.84
7.75	0.93	10.85	2.06	12.05	2.35	12.77	3.04	13.51	2.82
8.06	0.97	10.92	2.06	12.08	2.39	12.80	3.05	13.53	2.80
8.17	0.98	10.97	2.06	12.10	2.43	12.83	3.05		
8.46	0.99	11.09	2.04	12.12	2.48	12.88	3.05		

Data 6/28/55: Field parallel trigonal axis; P = 90 mm Hg.; Octal S; Hall (g+,w-); current (b+,r-) = 0.0165 amp.

Field	Hall	Field	Hall	Field	Hall	Field	Hall	Field	Hall
k.-g.	m.v.	k.-g.	m.v.	k.-g.	m.v.	k.-g.	m.v.	k.-g.	m.v.
2.39	0.28	7.95	1.12	10.71	1.89	11.90	2.60	12.60	3.26
2.50	0.29	8.01	1.13	10.77	1.92	11.93	2.62	12.64	3.30
3.07	0.37	8.21	1.17	10.83	1.95	11.97	2.65	12.70	3.37
3.44	0.42	8.41	1.21	10.89	1.98	12.01	2.68	12.74	3.42
3.67	0.45	8.56	1.24	10.97	2.02	12.04	2.70	12.80	3.48
3.88	0.48	8.74	1.28	11.02	2.05	12.06	2.72	12.86	3.54
4.09	0.51	8.87	1.31	11.09	2.08	12.08	2.74	12.91	3.60
4.30	0.54	9.01	1.34	11.17	2.12	12.11	2.76	12.94	3.64
4.51	0.57	9.09	1.36	11.22	2.15	12.13	2.79	12.96	3.66
4.79	0.61	9.21	1.39	11.26	2.18	12.16	2.82	12.99	3.70
5.00	0.64	9.33	1.42	11.30	2.20	12.18	2.84	13.03	3.75
5.27	0.68	9.49	1.46	11.34	2.23	12.22	2.88	13.07	3.80
5.40	0.70	9.61	1.50	11.39	2.26	12.26	2.92	13.10	3.84
5.66	0.74	9.67	1.51	11.45	2.30	12.27	2.93	13.13	3.88
5.83	0.77	9.84	1.56	11.48	2.32	12.30	2.96	13.18	3.94
6.05	0.80	9.90	1.59	11.54	2.36	12.32	2.98	13.21	3.97
6.18	0.82	9.98	1.61	11.61	2.41	12.36	3.02	13.25	4.03
6.35	0.85	10.14	1.66	11.64	2.43	12.40	3.06	13.29	4.08
6.69	0.90	10.24	1.70	11.69	2.46	12.42	3.08	13.33	4.12
6.84	0.93	10.30	1.73	11.72	2.48	12.94	3.10	13.35	4.16
7.08	0.97	10.39	1.76	11.76	2.51	12.46	3.12	13.39	4.20
7.29	1.00	10.49	1.80	11.79	2.53	12.49	3.15	13.43	4.26
7.46	1.03	10.54	1.82	11.82	2.55	12.54	3.20	13.47	4.30
7.73	1.08	10.64	1.86	11.86	2.58	12.57	3.23	13.51	4.35

Data 6/28/55: Field parallel trigonal axis; P = 41 mm Hg.; Octal N; Hall (w+,g-); current (b+,r-) = 0.0165 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
3.36	0.02	8.56	1.00	10.25	1.69	11.24	2.00	12.29	2.70
3.66	0.06	8.65	1.04	10.29	1.74	11.27	2.00	12.33	2.79
4.16	0.10	8.75	1.11	10.34	1.81	11.30	1.97	12.46	2.90
4.51	0.15	8.88	1.20	10.39	1.87	11.33	1.96	12.56	3.00
4.79	0.18	8.98	1.30	10.44	1.92	11.36	1.95	12.60	3.03
5.14	0.23	9.09	1.36	10.49	1.96	11.39	1.94	12.68	3.05
5.34	0.25	9.17	1.41	10.52	2.00	11.44	1.93	12.77	3.06
5.53	0.30	9.31	1.44	10.57	2.03	11.47	1.92	12.85	3.09
5.73	0.33	9.33	1.44	10.62	2.05	11.60	1.92	12.89	3.10
5.92	0.39	9.45	1.44	10.64	2.08	11.68	1.94	13.02	3.10
6.31	0.44	9.49	1.44	10.69	2.09	11.72	1.97	13.13	3.10
6.51	0.51	9.56	1.43	10.73	2.10	11.75	2.00	13.16	3.09
6.63	0.53	9.63	1.41	10.77	2.11	11.80	2.03	13.19	3.07
6.90	0.56	9.67	1.40	10.83	2.11	11.84	2.07	13.25	3.04
7.02	0.69	9.71	1.39	10.87	2.11	11.87	2.11	13.32	3.00
7.29	0.71	9.81	1.38	10.93	2.11	11.92	2.16	13.36	2.98
7.46	0.71	9.89	1.38	10.95	2.11	11.96	2.30	13.41	2.93
7.64	0.76	9.98	1.40	11.01	2.10	12.06	2.34	13.47	2.90
7.84	0.86	10.05	1.45	11.05	2.09	12.15	2.48	13.51	2.88
7.90	0.94	10.07	1.48	11.07	2.08	12.18	2.53	13.55	2.84
8.07	1.00	10.13	1.53	11.13	2.06	12.20	2.58	13.58	2.82
8.17	1.00	10.16	1.57	11.17	2.05	12.22	2.63	13.63	2.79
8.36	1.00	10.24	1.66	11.21	2.03	12.28	2.70	13.67	2.78

Data 6/28/55: Field parallel trigonal axis; P = 41 mm Hg.; Octal S; Hall (g+,w-); current (b+,r-) = 0.0165 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
2.09	0.01	8.75	1.52	10.49	2.60	11.72	2.60	12.76	4.00
2.54	0.04	8.91	1.64	10.55	2.66	11.82	2.75	12.80	4.00
2.92	0.07	8.99	1.71	10.59	2.70	11.88	2.82	12.87	4.00
3.37	0.12	9.09	1.85	10.71	2.75	11.89	2.86	12.91	4.00
3.74	0.16	9.17	1.91	10.83	2.75	11.96	3.00	12.96	4.00
4.23	0.24	9.31	1.94	10.91	2.74	11.99	3.10	12.99	3.99
4.72	0.32	9.49	1.93	10.93	2.73	12.03	3.18	13.00	3.99
5.00	0.36	9.57	1.90	10.99	2.71	12.08	3.24	13.04	3.97
5.34	0.44	9.63	1.86	11.02	2.68	12.12	3.34	13.08	3.95
5.66	0.52	9.71	1.85	11.09	2.66	12.13	3.46	13.14	3.91
5.99	0.60	9.79	1.84	11.13	2.62	12.18	3.51	13.19	3.86
6.05	0.64	9.88	1.84	11.19	2.59	12.24	3.58	13.24	3.82
6.54	0.80	9.95	1.85	11.23	2.55	12.27	3.63	13.30	3.76
6.96	0.95	10.01	1.89	11.24	2.55	12.33	3.70	13.34	3.71
7.29	1.05	10.07	1.96	11.27	2.52	12.40	3.76	13.40	3.66
7.84	1.22	10.13	2.04	11.33	2.50	12.44	3.81	13.44	3.60
8.01	1.38	10.21	2.15	11.39	2.48	12.50	3.85		
8.17	1.40	10.25	2.27	11.44	2.46	12.53	3.90		
8.42	1.39	10.30	2.35	11.51	2.46	12.60	3.94		
8.51	1.38	10.35	2.42	11.58	2.48	12.62	3.95		
8.65	1.40	10.39	2.48	11.63	2.50	12.65	3.97		
8.70	1.45	10.44	2.55	11.66	2.54	12.71	3.99		

Data 6/28/55: Field parallel trigonal axis; P = 20 cm Oct-oil S; Octal N; Hall (w+,g-); current (b+,r-) = 0.0165 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
2.84	0.01	8.21	1.00	10.20	1.66	11.60	1.87	12.73	3.10
3.21	0.03	8.35	1.00	10.24	1.74	11.63	1.90	12.82	3.10
3.59	0.05	8.40	0.98	10.29	1.80	11.69	1.94	12.89	3.10
4.09	0.10	8.56	0.98	10.32	1.86	11.73	1.98	12.97	3.10
4.56	0.15	8.65	1.00	10.39	1.95	11.81	2.05	13.02	3.09
4.86	0.20	8.74	1.08	10.44	2.00	11.85	2.12	13.03	3.08
5.14	0.24	8.83	1.15	10.52	2.05	12.00	2.32	13.07	3.06
5.60	0.30	8.90	1.25	10.62	2.10	12.02	2.37	13.12	3.04
5.92	0.40	8.97	1.32	10.71	2.12	12.04	2.40	13.16	3.00
6.12	0.40	9.09	1.39	10.79	2.12	12.08	2.50	13.22	2.96
6.51	0.53	9.17	1.44	10.90	2.11	12.13	2.59	13.29	2.91
6.75	0.53	9.29	1.45	10.95	2.10	12.14	2.67	13.33	2.87
6.93	0.58	9.45	1.45	11.01	2.08	12.19	2.76	13.37	2.83
7.05	0.65	9.53	1.43	11.07	2.05	12.25	2.84	13.41	2.79
7.17	0.72	9.63	1.40	11.13	2.00	12.29	2.89	13.48	2.75
7.40	0.72	9.70	1.38	11.22	1.96	12.36	2.95	13.57	2.69
7.58	0.73	9.83	1.35	11.27	1.94	12.41	2.00	13.64	2.65
7.70	0.79	9.95	1.36	11.33	1.90	12.44	3.01		
7.82	0.88	10.01	1.43	11.36	1.88	12.51	3.05		
7.89	0.95	10.10	1.52	11.42	1.87	12.56	3.07		
8.01	1.00	10.16	1.59	11.51	1.87	12.64	3.09		

Data 6/28/55: Field parallel trigonal axis; P = 20 cm Oct-oil S; Octal S; Hall (g+,w-); current (b+,r-) = 0.0165 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
2.11	0.02	8.35	1.41	10.37	2.55	11.51	2.36	12.71	4.05
2.54	0.05	8.44	1.36	10.44	2.64	11.63	2.36	12.77	4.05
2.99	0.09	8.56	1.35	10.49	2.69	11.78	2.43	12.83	4.05
3.44	0.14	8.65	1.37	10.54	2.75	11.86	2.53	12.89	4.05
3.88	0.20	8.74	1.44	10.67	2.80	11.92	2.74	12.98	4.04
4.23	0.25	8.83	1.59	10.73	2.80	11.97	2.84	13.02	4.02
4.58	0.31	8.92	1.72	10.81	2.80	12.02	2.91	13.03	4.00
5.00	0.40	9.01	1.84	10.85	2.80	12.04	3.02	13.10	3.97
5.40	0.50	9,09	1.91	10.89	2.78	12.06	3.10	13.14	3.94
5.72	0.55	9.17	1.955	10.64	2.73	12.08	3.23	13.18	3.90
6.05	0.64	9.26	1.98	10.81	2.78	12.14	3.36	13.24	3.84
6.38	0.77	9.42	1.96	10.89	2.80	12.16	3.46	13.28	3.77
6.69	0.81	9.63	1.86	10.97	2.80	12.20	3.59	13.39	3.69
6.93	1.00	9.67	1.83	11.01	2.75	12.22	3.62	13.43	3.58
7.29	1.07	9.78	1.78	11.09	2.72	12.28	3.71	13.50	3.48
7.43	1.05	9.89	1.78	11.13	2.68	12.31	3.76	13.60	3.38
7.57	1.05	9.96	1.82	11.21	2.59	12.36	3.84	13.69	3.30
7.74	1.20	10.07	1.95	11.27	2.55	12.48	3.88		
7.84	1.30	10.13	2.05	11.35	2.50	12.57	3.96		
7.95	1.39	10.19	2.18	11.37	2.45	12.63	4.00		
8.06	1.43	10.25	2.31	11.42	2.41	12.66	4.03		
8.16	1.44	10.30	2.41	11.48	2.38	12.69	4.05		

Data 6/28/55: Field parallel trigonal axis; P = 2.2 cm Oct-oil S; Octal N; Hall (w+,g-); current (b+,r-) = 0.0165 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
3.44	0.04	8.56	0.98	11.07	2.08	12.45	3.07		
4.02	0.09	8.65	1.05	11.13	2.04	12.50	3.09		
4.65	0.15	8.78	1.20	11.23	1.97	12.56	3.10		
5.27	0.24	8.87	1.34	11.30	1.90	12.64	3.13		
5.69	0.31	9.05	1.45	11.37	1.85	12.71	3.14		
6.05	0.41	9.22	1.49	11.44	1.81	12.79	3.15		
6.41	0.51	9.42	1.48	11.53	1.80	12.86	3.15		
6.60	0.59	9.63	1.39	11.62	1.82	12.93	3.15		
6.81	0.53	9.77	1.32	11.70	1.89	12.97	3.13		
6.93	0.63	9.91	1.31	11.79	2.00	13.04	3.10		
7.11	0.73	10.01	1.40	11.87	2.15	13.09	3.08		
7.29	0.74	10.13	1.58	11.96	2.30	13.12	3.05		
7.41	0.71	10.24	1.78	12.01	2.39	13.18	3.00		
7.62	0.73	10.29	1.90	12.05	2.55	13.23	2.95		
7.74	0.90	10.39	2.04	12.12	2.70	13.28	2.91		
7.95	1.02	10.49	2.10	12.18	2.80	13.33	2.85		
8.03	1.04	10.64	2.15	12.22	2.88	13.37	2.80		
8.17	1.02	10.75	2.17	12.28	2.95	13.64	2.54		
8.34	0.99	10.89	2.16	12.34	3.00				
8.41	0.96	11.01	2.12	12.40	3.05				

Data 6/28/55: Field parallel trigonal axis; P = 2.2 cm
Octoil S; Octal S; Hall (g+,w-); current (b+,r-) = 0.0165 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
2.36	0.02	8.02	1.98	10.49	2.79	11.96	2.98	13.02	4.06
3.45	0.13	8.26	1.95	10.64	2.85	12.02	3.15	13.05	4.03
4.02	0.20	8.36	1.40	10.73	2.87	12.06	3.23	13.10	3.98
4.37	0.27	8.42	1.35	10.81	2.87	12.08	3.35	13.13	3.93
4.72	0.34	8.56	1.31	10.87	2.86	12.10	3.43	13.21	3.88
5.22	0.42	8.70	1.38	10.93	2.83	12.13	3.54	13.27	3.74
5.59	0.52	8.82	1.54	11.01	2.80	12.16	3.65	13.33	3.66
5.92	0.66	8.97	1.84	11.07	2.73	12.23	3.78	13.40	3.57
6.31	0.77	9.10	1.99	11.13	2.66	12.28	3.86	13.43	3.48
6.51	0.84	9.33	2.03	11.23	2.54	12.31	3.91	13.50	3.38
6.69	0.82	9.49	2.00	11.27	2.47	12.36	3.56	13.59	3.27
6.81	0.80	9.56	1.91	11.36	2.36	12.42	4.01	13.61	3.25
6.93	0.90	9.63	1.80	11.39	2.33	12.47	4.05		
7.05	1.04	9.89	1.72	11.45	2.29	12.54	4.08		
7.17	1.10	9.98	1.78	11.51	2.28	12.59	4.10		
7.46	1.02	10.07	1.91	11.55	2.28	12.68	4.11		
7.56	1.02	10.22	2.20	11.61	2.30	12.75	4.12		
7.67	1.15	10.26	2.39	11.68	2.37	12.78	4.12		
7.73	1.28	10.34	2.55	11.77	2.52	12.88	4.10		
7.92	1.45	10.41	2.69	11.85	2.71	12.95	4.09		

Data 7/4/55: Field perp. trig. and bin.; P = 763.4 mm Hg.; Octal S; Hall (b+,r-); current (w+,g-) = 0.0165 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
3.75	0.04	7.95	0.59	10.13	0.75	11.55	1.09	12.79	0.97
4.15	0.05	8.15	0.61	10.21	0.78	11.61	1.08	12.85	0.98
4.72	0.08	8.26	0.64	10.28	0.81	11.70	1.06	12.90	1.00
5.27	0.15	8.45	0.65	10.34	0.85	11.77	1.05	12.94	1.01
5.45	0.18	8.60	0.67	10.40	0.90	11.85	1.03	13.00	1.03
5.55	0.19	8.74	0.67	10.49	0.94	11.94	1.01	13.03	1.05
5.79	0.20	8.83	0.67	10.56	0.96	12.00	1.00	13.07	1.07
6.18	0.18	9.00	0.67	10.64	1.01	12.06	0.99	13.12	1.10
6.43	0.16	9.05	0.66	10.73	1.05	12.12	0.98	13.17	1.13
6.68	0.18	9.11	0.66	10.81	1.06	12.19	0.97	13.23	1.16
6.75	0.20	9.25	0.65	10.85	1.09	12.26	0.96	13.27	1.20
6.88	0.25	9.30	0.65	10.92	1.10	12.32	0.95	13.31	1.23
6.93	0.28	9.35	0.64	10.95	1.11	12.37	0.95	13.34	1.26
7.05	0.34	9.45	0.63	11.13	1.12	12.42	0.95	13.39	1.31
7.17	0.39	9.63	0.63	11.21	1.12	12.48	0.95	13.44	1.35
7.23	0.42	9.77	0.63	11.27	1.12	12.52	0.95	13.51	1.42
7.35	0.46	9.84	0.65	11.36	1.12	12.55	0.95	13.55	1.46
7.50	0.50	9.92	0.66	11.42	1.11	12.62	0.95		
7.62	0.54	9.98	0.68	11.45	1.11	12.69	0.95		
7.73	0.56	10.07	0.71	11.51	1.10	12.74	0.96		

Data 7/4/55: Field perp. trig. and bin.; P = 763.4 mm Hg.; Octal N; Hall (r+,b-); current (w+,g-) = 0.0165 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
2.55	0.05	8.27	1.24	11.24	1.81	12.45	1.60	13.39	2.41
2.99	0.08	8.57	1.29	11.27	1.81	12.52	1.60	13.40	2.46
3.45	0.13	8.61	1.29	11.32	1.81	12.57	1.61	13.45	2.53
3.60	0.15	8.83	1.30	11.36	1.80	12.64	1.63	13.49	2.61
3.89	0.17	9.05	1.30	11.45	1.78	12.68	1.65	13.53	2.70
4.30	0.20	9.25	1.28	11.51	1.76	12.73	1.66	13.54	2.70
4.58	0.26	9.41	1.26	11.58	1.74	12.78	1.69		
4.86	0.31	9.63	1.26	11.64	1.71	12.84	1.72		
5.14	0.35	9.80	1.28	11.72	1.70	12.90	1.75		
5.34	0.40	9.98	1.34	11.78	1.68	12.94	1.79		
5.53	0.43	10.19	1.44	11.84	1.66	12.99	1.83		
5.79	0.46	10.35	1.55	11.94	1.65	13.03	1.85		
6.15	0.46	10.54	1.65	12.04	1.63	13.07	1.91		
6.43	0.46	10.62	1.70	12.11	1.61	13.11	1.96		
6.69	0.53	10.77	1.77	12.14	1.61	13.15	2.01		
6.93	0.66	10.85	1.79	12.20	1.60	13.19	2.08		
7.17	0.83	10.93	1.80	12.24	1.60	13.23	2.13		
7.50	0.95	10.99	1.80	12.30	1.60	13.26	2.20		
7.73	1.04	11.09	1.81	12.34	1.60	13.31	2.26		
7.95	1.15	11.15	1.81	12.39	1.60	13.34	2.34		

Data 7/4/55: Field perp. trig. and bin.; P = 451 mm Hg.; Octal S; Hall (b+,r-); current (w+,g-) = 0.0165 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
2.99	0.01	7.50	0.50	10.81	1.06	12.26	0.92	13.36	1.22
3.18	0.01	7.63	0.53	10.89	1.09	12.31	0.91	13.42	1.28
3.44	0.01	7.85	0.56	10.99	1.10	12.37	0.91	13.47	1.33
3.74	0.09	8.05	0.59	11.09	1.11	12.44	0.91	13.50	1.38
3.88	0.05	8.25	0.63	11.17	1.11	12.48	0.91	13.55	1.44
4.03	0.05	8.50	0.66	11.25	1.11	12.52	0.91		
4.30	0.05	8.65	0.67	11.33	1.11	12.58	0.91		
4.55	0.06	8.80	0.67	11.40	1.10	12.65	0.91		
4.72	0.08	9.00	0.66	11.45	1.10	12.71	0.91		
4.86	0.10	9.21	0.64	11.51	1.09	12.77	0.92		
5.14	0.12	9.39	0.61	11.57	1.07	12.83	0.93		
5.28	0.15	9.58	0.60	11.66	1.05	12.89	0.95		
5.55	0.19	9.77	0.60	11.75	1.03	12.94	0.96		
5.78	0.20	9.95	0.65	11.84	1.00	13.00	0.99		
6.11	0.20	10.07	0.70	11.90	0.99	13.05	1.00		
6.43	0.17	10.21	0.76	11.97	0.98	13.11	1.03		
6.69	0.17	10.31	0.83	12.04	0.96	13.15	1.05		
6.87	0.24	10.41	0.89	12.10	0.95	13.20	1.08		
7.10	0.34	10.59	0.97	12.15	0.94	13.28	1.15		
7.29	0.42	10.73	1.04	12.22	0.93	13.33	1.20		

Data 7/4/55: Field perp. trig. and bin.; P = 451 mm Hg.; Octal N; Hall (r+,b-); current (w+,g-) = 0.0165 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
2.54	0.05	6.93	0.69	10.29	1.55	12.04	1.64	12.96	1.79
2.70	0.06	7.23	0.86	10.45	1.66	12.12	1.61	13.00	1.83
2.98	0.08	7.57	1.00	10.69	1.79	12.22	1.60	13.07	1.90
3.20	0.10	7.84	1.10	10.85	1.84	12.29	1.60	13.15	2.02
3.59	0.14	8.11	1.22	11.02	1.87	12.36	1.60	13.23	2.15
3.88	0.17	8.26	1.27	11.18	1.87	12.40	1.60	13.30	2.28
4.16	0.19	8.55	1.32	11.30	1.86	12.46	1.60	13.36	2.40
4.58	0.25	8.73	1.34	11.35	1.84	12.56	1.60	13.40	2.47
5.00	0.33	8.96	1.34	11.43	1.83	12.64	1.61	13.44	2.55
5.40	0.41	9.25	1.31	11.52	1.79	12.65	1.63	13.51	2.69
5.66	0.46	9.45	1.29	11.63	1.75	12.74	1.65	13.58	2.83
5.93	0.48	9.70	1.28	11.72	1.72	12.77	1.67	13.59	2.85
6.37	0.48	9.89	1.32	11.83	1.69	12.87	1.71		
6.69	0.53	10.07	1.40	11.90	1.65	12.91	1.75		

Data 7/4/55: Field perp. trig. and bin.; P = 225 mm Hg.; Octal S; Hall (b+,r-); current (w+,g-) = 0.0350 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
2.54	0.02	6.69	0.41	10.10	1.49	11.72	2.18	12.78	1.90
2.84	0.03	6.93	0.65	10.27	1.68	11.79	2.14	12.84	1.92
3.07	0.04	7.05	0.80	10.34	1.80	11.87	2.10	12.94	1.97
3.37	0.04	7.29	0.95	10.40	1.88	11.95	2.05	12.99	2.00
3.52	0.07	7.40	1.08	10.49	2.00	12.00	2.02	13.04	2.04
3.74	0.10	7.62	1.16	10.56	2.07	12.12	1.95	13.07	2.08
3.95	0.11	7.84	1.21	10.73	2.20	12.18	1.93	13.11	2.13
4.16	0.12	8.02	1.28	10.77	2.26	12.24	1.90	13.17	2.20
4.30	0.14	8.21	1.35	10.89	2.35	12.29	1.90	13.20	2.25
4.58	0.16	8.46	1.43	10.97	2.38	12.33	1.89	13.26	2.33
4.72	0.19	8.65	1.95	11.01	2.90	12.37	1.89	13.31	2.40
4.79	0.21	8.79	1.45	11.09	2.41	12.40	1.88	13.34	2.50
4.93	0.24	9.01	1.41	11.19	2.41	12.44	1.88	13.39	2.60
5.14	0.27	9.17	1.35	11.27	2.41	12.47	1.88	13.43	2.69
5.27	0.32	9.25	1.31	11.35	2.39	12.50	1.88	13.47	2.82
5.40	0.40	9.41	1.27	11.40	2.36	12.56	1.88	13.52	2.92
5.68	0.44	9.57	1.25	11.48	2.33	12.63	1.88	13.55	3.03
5.92	0.44	9.74	1.25	11.57	2.28	12.68	1.88		
6.18	0.39	9.95	1.35	11.61	2.25	12.71	1.89		
6.47	0.35	10.02	1.42	11.66	2.22	12.75	1.90		

Data 7/4/55: Field perp. trig. and bin.; P = 225 mm Hg.; Octal N; Hall (r+,b-); current (w+,g-) = 0.0350 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
2.17	0.11	5.27	0.90	7.84	2.41	9.92	2.89	11.99	3.49
2.24	0.12	5.40	0.95	7.95	2.57	10.04	3.00	12.07	3.43
2.32	0.13	5.53	1.00	8.06	2.65	10.10	3.10	12.14	3.40
2.39	0.14	5.66	1.05	8.16	2.74	10.19	3.21	12.24	3.36
2.54	0.15	5.79	1.09	8.26	2.81	10.29	3.37	12.30	3.36
2.69	0.19	6.05	1.09	8.36	2.86	10.34	3.49	12.35	3.36
2.88	0.21	6.20	1.05	8.46	2.91	10.40	3.59	12.40	3.36
3.00	0.24	6.31	1.04	8.56	2.95	10.47	3.66	12.46	3.36
3.14	0.25	6.57	1.05	8.65	2.95	10.59	3.83	12.51	3.36
3.29	0.26	6.63	1.11	8.83	2.95	10.65	3.91	12.55	3.36
3.45	0.33	6.72	1.24	8.92	2.95	10.77	4.01	12.59	3.38
3.60	0.38	6.81	1.34	9.01	2.93	10.89	4.09	12.64	3.40
3.81	0.41	6.87	1.45	9.09	2.90	10.91	4.11	12.66	3.42
4.02	0.43	6.95	1.55	9.17	2.86	11.13	4.11	12.73	3.46
4.18	0.44	7.05	1.67	9.25	2.84	11.21	4.10	12.78	3.51
4.36	0.50	7.14	1.80	9.33	2.81	11.27	4.07	12.80	3.57
4.58	0.61	7.20	1.89	9.41	2.79	11.35	4.01	12.85	3.64
4.72	0.66	7.29	1.96	9.50	2.76	11.42	3.96	12.91	3.75
4.80	0.70	7.45	2.10	9.62	2.76	11.54	3.85	12.96	3.85
4.93	0.73	7.56	2.18	9.70	2.76	11.66	3.75	12.99	3.92
5.13	0.77	7.66	2.26	9.78	2.79	11.78	3.69	13.04	4.05
5.15	0.84	7.75	2.35	9.88	2.84	11.87	3.55	13.10	4.26

Data 7/4/55: Field perp. trig. and bin.; P = 90 mm Hg.; Octal S; Hall (b+,r-); current (w+,g-) = 0.0250 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
2.69	0.00	6.82	0.30	9.83	0.87	11.51	1.67	12.46	1.31
2.84	0.01	7.00	0.45	9.89	0.90	11.57	1.64	12.50	1.31
2.99	0.02	7.10	0.57	9.95	0.93	11.61	1.62	12.54	1.31
3.14	0.03	7.18	0.65	10.02	0.96	11.65	1.60	12.58	1.31
3.29	0.03	7.30	0.71	10.10	1.03	11.69	1.58	12.60	1.31
3.40	0.03	7.62	0.81	10.17	1.09	11.75	1.55	12.64	1.31
3.44	0.04	7.80	0.85	10.29	1.21	11.78	1.52	12.68	1.31
3.55	0.05	7.95	0.89	10.41	1.33	11.82	1.50	12.69	1.31
3.66	0.06	8.16	0.94	10.46	1.40	11.87	1.49	12.75	1.31
3.88	0.06	8.30	0.99	10.51	1.44	11.91	1.46	12.78	1.31
4.02	0.07	8.46	1.03	10.59	1.51	11.97	1.44	12.82	1.31
4.17	0.07	8.60	1.05	10.70	1.59	12.02	1.41	12.85	1.33
4.37	0.09	8.74	1.05	10.75	1.63	12.06	1.40	12.89	1.34
4.58	0.10	8.92	1.05	10.85	1.68	12.10	1.38	12.93	1.35
4.72	0.13	8.97	1.03	10.93	1.72	12.13	1.36	12.96	1.35
4.87	0.15	9.05	1.01	11.00	1.74	12.16	1.35	12.99	1.36
5.15	0.18	9.12	0.99	11.09	1.75	12.20	1.34	13.04	1.39
5.27	0.23	9.21	0.96	11.15	1.75	12.24	1.33	13.08	1.41
5.43	0.28	9.25	0.94	11.21	1.75	12.28	1.32	13.10	1.45
5.72	0.30	9.33	0.92	11.27	1.75	12.31	1.32	13.17	1.50
5.91	0.30	9.45	0.90	11.30	1.75	12.33	1.31	13.25	1.60
6.09	0.30	9.53	0.88	11.35	1.74	12.34	1.31	13.31	1.67
6.39	0.27	9.63	0.87	11.39	1.72	12.38	1.31	13.42	1.87
6.44	0.25	9.70	0.87	11.42	1.71	12.40	1.31	13.48	1.98
6.62	0.24	9.77	0.87	11.47	1.69	12.44	1.31	13.51	2.05

Data 7/4/55: Field perp. trig. and bin.; P = 90 mm Hg.; Octal S; Hall (b+,r-); current (w+,g-) = 0.0250 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
2.39	0.09	6.50	0.75	9.63	1.99	11.36	2.94	12.69	2.40
2.5o	0.10	6.58	0.77	9.72	1.98	11.42	2.90	12.73	2.41
2.55	0.10	6.69	0.86	9.83	2.01	11.48	2.86	12.77	2.43
2.69	0.13	6.87	1.06	9.93	2.07	11.57	2.79	12.83	2.47
2.84	0.14	7.00	1.18	10.00	2.14	11.65	2.74	12.92	2.55
2.95	0.15	7.05	1.28	10.07	2.23	11.70	2.69	12.94	2.61
3.14	0.17	7.10	1.33	10.16	2.30	11.75	2.64	13.01	2.72
3.29	0.19	7.28	1.41	10.24	2.39	11.81	2.60	13.05	2.82
3.44	0.22	7.34	1.50	10.35	2.57	11.87	2.56	13.10	2.92
3.59	0.27	7.56	1.58	10.44	2.66	11.93	2.51	13.13	3.01
3.88	0.30	7.68	1.66	10.50	2.75	12.04	2.47	13.18	3.17
4.02	0.31	7.84	1.74	10.60	2.84	12.08	2.44	13.22	3.28
4.23	0.32	7.95	1.86	10.66	2.89	12.16	2.41	13.25	3.40
4.35	0.36	8.16	2.00	10.73	2.93	12.23	2.39	13.30	3.55
4.57	0.45	8.28	2.07	10.77	2.95	12.28	2.39	13.33	3.69
4.72	0.50	8.52	2.15	10.82	2.98	12.32	2.38	13.39	3.88
4.86	0.52	8.67	2.16	10.89	3.00	12.36	2.38	13.43	4.05
5.00	0.56	8.95	2.16	10.93	3.01	12.39	2.38	13.47	4.20
5.15	0.61	9.03	2.14	11.01	3.02	12.44	2.38	13.55	4.48
5.30	0.68	9.13	2.10	11.05	3.02	12.49	2.38	13.57	4.54
5.55	0.74	9.21	2.07	11.13	3.02	12.56	2.38		
5.79	0.79	9.30	2.04	11.21	3.02	12.61	2.38		
6.05	0.80	9.41	2.00	11.27	3.00	12.64	2.38		
6.30	0.75	9.50	1.99	11.33	2.97	12.67	2.39		

Data 7/4/55: Field perp. trig. and bin.; P = 41 mm Hg.; Octal S; Hall (b+,r-); current (w+,g-) = p.0200 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
2.84	0.01	6.93	0.24	9.49	0.69	11.69	1.22	12.38	1.00
3.14	0.02	7.05	0.33	9.60	0.67	11.72	1.20	12.44	1.00
3.29	0.02	7.23	0.45	9.67	0.66	11.77	1.18	12.62	1.00
3.51	0.03	7.30	0.51	9.84	0.66	11.79	1.17	12.82	1.00
3.8o	0.04	7.40	0.55	9.90	0.67	11.84	1.15	12.91	1.01
4.00	0.05	7.51	0.58	9.95	0.69	11.88	1.14	12.96	1.02
4.18	0.05	7.62	0.61	10.05	0.74	11.93	1.12	13.01	1.04
4.44	0.06	7.75	0.64	10.24	0.86	17.97	1.10	13.07	1.05
4.70	0.09	7.85	0.66	10.31	0.95	12.02	1.09	13.11	1.08
4.86	0.10	7.93	0.66	10.39	1.01	12.03	1.08	13.16	1.10
5.27	0.15	7.97	0.67	10.50	1.11	12.05	1.08	13.23	1.14
5.53	0.21	8.00	0.68	10.64	1.20	12.08	1.06	13.28	1.19
5.75	0.23	8.15	0.71	10.79	1.30	12.10	1.05	13.33	1.25
5.95	0.23	8.27	0.75	10.85	1.33	12.13	1.05	13.37	1.30
6.18	0.23	8.45	0.79	10.95	1.35	12.15	1.04	13.41	1.37
6.30	0.21	8.53	0.80	11.07	1.36	12.18	1.03	13.44	1.43
6.33	0.20	8.65	0.82	11.28	1.36	12.19	1.03	13.49	1.52
6.38	0.20	8.85	0.82	11.33	1.36	12.21	1.03	13.52	1.56
6.44	0.19	8.95	0.82	11.37	1.35	12.22	1.02		
6.50	0.18	9.08	0.30	11.42	1.34	12.25	1.01		
6.57	0.18	9.18	0.76	11.48	1.30	12.28	1.04		
6.69	0.18	9.25	0.75	11.56	1.28	12.29	1.00		
6.72	0.18	9.29	0.73	11.60	1.26	12.30	1.00		
6.81	0.19	9.41	0.70	11.66	1.24	12.32	1.00		

Data 7/4/55: Field perp. trig. and bin.; P = 41 mm Hg.; Octal S; Hall (r+,b-); current (w+,g-) = 0.0200 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
2.85	0.10	6.81	0.73	9.89	1.61	11.81	2.08	12.82	1.90
3.14	0.14	7.18	1.08	10.00	1.69	11.89	2.03	12.87	1.95
3.51	0.19	7.30	1.17	10.13	1.79	11.99	1.98	12.89	2.00
3.74	0.22	7.51	1.24	10.29	1.92	12.06	1.94	12.94	2.05
4.02	0.25	7.73	1.34	10.34	2.04	12.12	1.91	12.99	2.10
4.30	0.25	7.85	1.41	10.46	2.15	12.16	1.89	13.05	2.20
4.44	0.33	8.05	1.51	10.57	2.25	12.20	1.89	13.13	2.36
4.72	0.39	8.12	1.59	10.75	2.36	12.24	1.88	13.20	2.50
5.00	0.41	8.26	1.66	10.88	2.41	12.29	1.88	13.27	2.69
5.25	0.49	8.48	1.72	11.01	2.44	12.34	1.87	13.35	2.91
5.45	0.55	8.65	1.74	11.11	2.44	12.38	1.87	13.51	3.21
5.66	0.60	8.79	1.75	11.20	2.44	12.42	1.87	13.56	3.44
5.90	0.65	9.01	1.74	11.27	2.42	12.46	1.87		
6.07	0.65	9.10	1.71	11.33	2.40	12.51	1.87		
6.18	0.62	9.25	1.67	11.42	2.35	12.58	1.89		
6.31	0.60	9.41	1.62	11.48	2.30	12.66	1.87		
6.57	0.60	9.63	1.54	11.60	2.23	12.73	1.89		
6.69	0.63	9.77	1.54	11.70	2.15	12.76	1.90		

Data 7/4/55: Field perp. trig. and bin.; P = 13 mm Hg.; Octal S; Hall (b+,r-); current (w+,g-) = 0.0200 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
2.92	0.00	6.94	0.25	9.42	0.69	11.60	1.28	12.91	0.99
3.14	0.02	7.18	0.94	9.56	0.66	11.67	1.24	12.96	0.99
3.29	0.02	7.30	0.50	9.66	0.65	11.75	1.20	12.97	0.99
3.45	0.03	7.35	0.55	9.86	0.65	11.83	1.15	13.02	1.00
3.66	0.04	7.41	0.56	9.95	0.67	11.94	1.11	13.05	1.00
3.88	0.05	7.52	0.60	10.13	0.75	12.02	1.08	13.10	1.03
4.09	0.05	7.62	0.63	10.24	0.85	12.08	1.05	13.13	1.05
4.30	0.05	7.74	0.65	10.34	0.98	12.15	1.02	13.17	1.07
4.45	0.07	7.93	0.66	10.47	1.10	12.22	1.00	13.23	1.13
4.72	0.10	8.05	0.69	10.62	1.23	12.28	1.00	13.29	1.19
5.00	0.11	8.18	0.74	10.75	1.30	12.36	0.99	13.37	1.29
5.21	0.16	8.35	0.78	10.86	1.35	12.44	0.99	13.45	1.42
5.55	0.23	8.51	0.81	10.97	1.37	12.50	0.99	13.52	1.57
5.85	0.24	8.70	0.83	11.09	1.39	12.57	0.99	13.56	1.64
6.08	0.24	8.91	0.83	11.19	1.39	12.64	0.99	13.58	1.67
6.44	0.19	9.03	0.81	11.33	1.38	12.71	0.99		
6.56	0.17	9.17	0.77	11.42	1.36	12.74	0.99		
6.75	0.17	9.33	0.72	11.35	1.32	12.84	0.99		

Data 7/4/55: Field perp. trig. and bin.; P = 13 mm Hg.; Octal S; Hall (r+,b-); current (w+,g-) = 0.0200 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
2.54	0.08	5.72	0.63	8.92	1.78	11.15	2.47	12.56	1.85
2.60	0.08	6.05	0.66	9.13	1.72	11.25	2.46	12.68	1.85
2.92	0.12	6.24	0.61	9.37	1.65	11.33	2.42	12.75	1.85
3.29	0.14	6.38	0.59	9.63	1.59	11.43	2.35	12.78	1.86
3.59	0.20	6.70	0.68	9.77	1.58	11.54	2.28	12.80	1.86
3.88	0.25	7.02	0.97	9.90	1.61	11.61	2.23	12.85	1.89
4.16	0.25	7.29	1.15	10.13	1.78	11.72	2.13	12.91	1.94
4.37	0.27	7.51	1.25	10.29	1.95	11.84	2.04	13.00	2.06
4.47	0.34	7.63	1.32	10.45	2.15	11.96	1.96	13.10	2.24
4.51	0.38	7.84	1.44	10.55	2.24	12.05	1.91	13.18	2.43
4.79	0.41	7.97	1.55	10.65	2.31	12.14	1.87	13.25	2.65
5.00	0.43	8.14	1.64	10.73	2.37	12.24	1.85	13.34	2.90
5.14	0.46	8.32	1.70	10.83	2.43	12.32	1.85	13.41	3.14
5.33	0.53	8.56	1.75	10.93	2.46	12.35	1.85	13.59	3.79
5.53	0.58	8.76	1.72	11.05	2.42	12.44	1.85		

Data 7/4/55: Field perp. trig. and bin.; P = 2.94 cm Oct-oil S; Octal S; Hall (b+,r-); current (w+,g-) = 0.0200 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
2.92	0.01	6.69	0.16	9.80	0.64	11.42	1.38	13.01	0.96
3.14	0.02	6.85	0.22	9.86	0.74	11.50	1.34	13.04	0.97
3.29	0.02	7.05	0.36	9.98	0.68	11.57	1.30	13.07	0.99
3.61	0.04	7.17	0.47	10.10	0.75	11.63	1.25	13.13	1.00
3.82	0.05	7.29	0.53	10.19	0.94	11.75	1.20	13.18	1.03
4.09	0.05	7.35	0.57	10.29	0.94	11.83	1.15	13.21	1.05
4.30	0.06	7.50	0.62	10.34	1.02	11.93	1.10	13.26	1.08
4.40	0.06	7.65	0.65	10.44	1.10	11.99	1.07	13.31	1.13
4.72	0.11	7.84	0.67	10.50	1.17	12.10	1.02	13.33	1.20
4.93	0.11	8.06	0.71	10.61	1.24	12.18	1.00	13.37	1.26
5.14	0.13	8.31	0.79	10.73	1.30	12.26	0.98	13.42	1.35
5.21	0.15	8.51	0.84	10.81	1.35	12.34	0.97	13.47	1.46
5.34	0.18	8.70	0.85	10.87	1.38	12.40	0.97	13.53	1.58
5.45	0.21	8.92	0.84	10.93	1.39	12.46	0.97	13.55	1.64
5.60	0.23	9.01	0.80	11.01	1.40	12.54	0.96		
5.73	0.24	9.25	0.74	11.09	1.41	12.62	0.96		
5.95	0.24	9.37	0.70	11.17	1.41	12.71	0.96		
6.18	0.24	9.49	0.67	11.25	1.41	12.78	0.96		
6.37	0.19	9.56	0.65	11.31	1.40	12.86	0.96		
6.51	0.17	9.63	0.64	11.36	1.40	12.93	0.96		

Data 7/4/55: Field perp. trig. and bin.; P = 2.99 cm Oct-oil S; Octal N; Hall (r+,b-); current (w+,g-) = 0.0200 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
2.39	0.08	6.38	0.59	9.80	1.58	11.77	2.08	12.80	1.81
2.72	0.11	6.60	0.63	9.88	1.61	11.87	2.00	12.83	1.83
3.00	0.14	6.70	0.70	10.02	1.71	11.95	1.95	12.86	1.85
3.29	0.15	6.85	0.88	10.16	1.82	11.92	1.92	12.91	1.89
3.59	0.22	7.05	1.08	10.24	1.91	12.06	1.87	12.97	1.97
3.88	0.25	7.17	1.16	10.32	2.05	12.12	1.85	13.03	2.04
4.02	0.25	7.30	1.24	10.40	2.15	12.16	1.84	13.10	2.20
4.30	0.27	7.62	1.34	10.54	2.30	12.21	1.83	13.13	2.28
4.44	0.35	7.95	1.55	10.73	2.44	12.25	1.83	13.17	2.37
4.70	0.40	8.10	1.66	10.93	2.50	12.30	1.83	13.23	2.54
4.86	0.43	8.26	1.74	11.13	2.50	12.34	1.83	13.27	2.64
5.14	0.44	8.56	1.79	11.27	2.49	12.37	1.83	13.38	3.05
5.27	0.54	8.83	1.80	11.36	2.44	12.46	1.82	13.47	3.39
5.40	0.57	8.92	1.79	11.43	2.39	12.50	1.81	13.54	3.56
5.53	0.60	9.05	1.75	11.54	2.29	12.54	1.80		
5.66	0.65	9.18	1.70	11.60	2.24	12.62	1.80		
5.85	0.67	9.49	1.59	11.60	2.19	12.70	1.80		
6.18	0.60	9.77	1.57	11.70	2.13	12.78	1.80		

Data 7/4/55: Field perp. trig. and bin.; P = 763.4 mm Hg.; Octal N; Hall (w+,g-); current (b+,r-) = 0.0165 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
2.80	0.01	7.89	0.59	10.39	0.87	11.85	1.00	12.75	0.95
3.06	0.01	8.11	0.64	10.49	0.94	11.93	1.00	12.79	0.95
3.29	0.02	8.25	0.66	10.64	1.00	12.02	0.98	12.85	0.98
3.59	0.04	8.36	0.68	10.75	1.04	12.08	0.97	12.91	0.99
4.02	0.05	8.53	0.70	10.85	1.08	12.14	0.96	12.96	1.00
4.30	0.06	8.67	0.70	10.93	1.09	12.18	0.95	13.01	1.03
4.72	0.10	8.83	0.70	10.99	1.11	12.23	0.95	13.05	1.05
4.07	0.12	9.01	0.70	11.13	1.11	12.26	0.95	13.10	1.09
5.40	0.18	9.17	0.68	11.24	1.11	12.32	0.94	13.15	1.12
5.80	0.20	9.33	0.65	11.33	1.11	12.34	0.94	13.18	1.14
6.17	0.20	9.50	0.64	11.40	1.10	12.36	0.94	13.23	1.19
6.44	0.20	9.63	0.64	11.46	1.09	12.42	0.94	13.25	1.23
6.63	0.19	9.77	0.64	11.51	1.08	12.46	0.94	13.32	1.29
6.72	0.20	9.90	0.65	11.57	1.06	12.52	0.94	13.41	1.39
7.05	0.37	10.01	0.68	11.64	1.05	12.54	0.94	13.47	1.46
7.34	0.48	10.09	0.71	11.72	1.04	12.62	0.94	13.57	1.58
7.62	0.54	10.24	0.79	11.78	1.02	12.68	0.94	13.58	1.60

Data 7/4/55: Field perp. trig. and bin.; P = 763.4 mm Hg.; Octal S; Hall (g+,w-); current (b+,r-) = 0.0165 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
2.39	0.04	7.05	0.75	9.86	1.28	11.57	1.78	12.71	1.68
3.21	0.09	7.17	0.81	10.01	1.34	11.64	1.76	12.77	1.70
3.44	0.13	7.29	0.86	10.19	1.43	11.72	1.75	12.83	1.73
3.74	0.15	7.40	0.91	10.29	1.50	11.80	1.72	12.91	1.75
3.81	0.16	7.57	0.97	10.39	1.58	11.86	1.71	12.92	1.79
4.09	0.18	7.73	1.01	10.49	1.64	11.93	1.70	12.97	1.81
4.37	0.20	7.90	1.07	10.61	1.71	12.00	1.69	13.03	1.87
4.72	0.28	8.06	1.12	10.73	1.75	12.06	1.67	13.10	1.93
4.86	0.30	8.21	1.18	10.77	1.77	12.12	1.66	13.15	1.98
5.14	0.36	8.36	1.21	10.83	1.80	12.16	1.65	13.20	2.03
5.40	0.40	8.46	1.25	10.93	1.82	12.24	1.65	13.25	2.09
5.53	0.43	8.65	1.28	11.05	1.84	12.30	1.65	13.31	2.15
5.73	0.45	8.75	1.29	11.17	1.84	12.34	1.65	13.39	2.25
5.92	0.45	8.92	1.29	11.27	1.84	12.40	1.65	13.44	2.35
6.18	0.45	9.10	1.29	11.36	1.84	12.46	1.65	13.49	2.45
6.44	0.48	9.33	1.27	11.42	1.83	12.53	1.65	13.55	2.55
6.75	0.55	9.45	1.25	11.47	1.80	12.60	1.65	13.58	2.63
6.93	0.65	9.70	1.25	11.51	1.80	12.65	1.66		

Data 7/4/55: Field perp. trig. and bin.; P = 451 mm Hg.; Octal N; Hall (w+,g-); current (b+,r-) = 0.0165 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
2.91	0.01	7.05	0.34	10.39	0.85	11.94	0.98	12.89	0.95
3.15	0.02	7.29	0.43	10.44	0.89	12.04	0.95	12.93	0.96
3.60	0.04	7.51	0.51	10.59	0.96	12.07	0.95	12.99	0.98
3.81	0.05	7.67	0.54	10.73	1.05	12.11	0.95	13.03	1.00
4.18	0.05	7.84	0.57	10.81	1.06	12.16	0.94	13.07	1.02
4.44	0.07	8.05	0.61	10.89	1.09	12.21	0.93	13.12	1.05
4.58	0.09	8.18	0.65	11.01	1.10	12.25	0.92	13.17	1.08
4.86	0.10	8.45	0.69	11.13	1.11	12.31	0.91	13.21	1.11
5.00	0.12	8.61	0.70	11.24	1.11	12.38	0.90	13.25	1.15
5.27	0.15	8.83	0.70	11.36	1.11	12.44	0.90	13.31	1.20
5.40	0.17	9.09	0.68	11.45	1.10	12.50	0.90	13.36	1.26
5.45	0.19	9.25	0.65	11.51	1.08	12.54	0.90	13.39	1.31
5.79	0.20	9.45	0.63	11.60	1.05	12.62	0.90	13.43	1.36
5.92	0.20	9.70	0.62	11.69	1.04	12.68	0.90	13.49	1.44
6.11	0.20	9.80	0.62	11.75	1.02	12.71	0.90	13.55	1.54
6.30	0.19	9.98	0.65	11.81	1.00	12.75	0.91	13.57	1.56
6.57	0.18	10.07	0.69	11.90	0.99	12.80	0.93		
6.81	0.21	10.19	0.74	11.93	0.99	12.85	0.94		

Data 7/4/55: Field perp. trig. and bin.; P = 457 mm Hg.; Octal S; Hall (g+,w-); current (b+,r-) = 0.0165 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
2.83	0.05	6.31	0.47	10.10	1.40	11.63	1.80	12.78	1.69
2.84	0.07	6.69	0.53	10.19	1.46	11.71	1.77	12.86	1.72
3.15	0.10	6.93	0.69	10.30	1.56	11.78	1.75	12.93	1.75
3.44	0.13	7.08	0.80	10.41	1.65	11.90	1.72	12.97	1.79
3.74	0.16	7.40	0.95	10.54	1.72	12.00	1.70	13.03	1.82
3.95	0.18	7.74	1.05	10.64	1.78	12.06	1.68	13.10	1.90
4.23	0.19	7.95	1.11	10.73	1.83	12.12	1.67	13.16	1.96
4.35	0.21	8.26	1.24	10.87	1.87	12.20	1.65	13.21	2.00
4.59	0.26	8.50	1.30	10.97	1.89	12.27	1.65	13.23	2.08
4.86	0.30	8.70	1.32	11.09	1.90	12.34	1.65	13.29	2.15
5.07	0.34	8.95	1.33	11.19	1.90	12.42	1.65	13.34	2.25
5.26	0.38	9.17	1.31	11.28	1.90	12.48	1.65	13.38	2.30
5.40	0.42	9.40	1.28	11.36	1.88	12.56	1.65	13.41	2.37
5.65	0.45	9.62	1.27	11.42	1.86	12.63	1.65	13.48	2.50
5.92	0.47	9.83	1.28	11.48	1.85	12.68	1.66	13.56	2.65
6.15	0.47	9.95	1.30	11.54	1.83	12.72	1.67	13.58	2.67

Data 7/4/55: Field perp. trig. and bin.; P = 225 mm Hg.; Octal N; Hall (w+,g-); current (b+,r-) = 0.0351 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
2.40	0.01	5.92	0.45	9.52	1.28	11.52	2.25	12.52	1.84
2.54	0.01	6.05	0.43	9.63	1.26	11.57	2.23	12.58	1.84
2.69	0.02	6.18	0.40	9.77	1.26	11.61	2.20	12.64	1.84
2.84	0.03	6.30	0.39	9.88	1.29	11.66	2.16	12.68	1.84
3.00	0.05	6.31	0.37	9.95	1.34	11.68	2.15	12.72	1.85
3.30	0.05	6.51	0.35	10.08	1.45	11.72	2.14	12.73	1.85
3.45	0.07	6.69	0.38	10.26	1.65	11.78	2.09	12.77	1.86
3.60	0.10	6.80	0.95	10.39	1.84	11.86	2.05	12.82	1.88
3.80	0.11	6.93	0.59	10.49	1.98	11.90	2.02	12.89	1.91
3.90	0.11	7.05	0.77	10.61	2.12	11.96	2.00	12.94	1.95
4.10	0.12	7.35	1.00	10.73	2.23	12.04	1.95	12.97	1.99
4.15	0.13	7.56	1.10	10.93	2.34	12.12	1.92	13.01	2.05
4.44	0.15	7.73	1.18	11.05	2.37	12.18	1.89	13.10	2.15
4.57	0.18	7.88	1.24	11.10	2.37	12.24	1.86	13.17	2.30
4.72	0.20	8.18	1.39	11.17	2.38	12.26	1.86	13.25	2.46
4.80	0.23	8.28	1.45	11.27	2.38	12.28	1.85	13.27	2.49
5.00	0.24	8.56	1.50	11.30	2.37	12.31	1.85	13.33	2.65
5.07	0.25	8.83	1.50	11.31	2.36	12.34	1.85	13.36	2.73
5.15	0.30	8.94	1.48	11.33	2.35	12.36	1.85	13.39	2.84
5.40	0.36	9.09	1.43	11.37	2.34	12.38	1.85	13.47	3.07
5.45	0.40	9.25	1.38	11.40	2.32	12.42	1.84	13.53	3.27
5.68	0.44	9.35	1.33	11.46	2.29	12.48	1.84	13.56	3.39

Data 7/4/55: Field perp. trig. and bin.; P = 225 mm Hg.; Octal S; Hall (g+,w-); current (b+,r-) = 0.0351 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
2.39	0.13	6.45	1.03	9.56	2.74	11.60	3.91	12.55	3.50
2.54	0.14	6.63	1.11	9.63	2.73	11.66	3.85	12.62	3.50
2.08	0.16	6.78	1.42	9.71	2.73	11.69	3.82	12.67	3.51
2.84	0.20	6.99	1.63	9.83	2.77	11.78	3.75	12.68	3.51
3.07	0.23	7.05	1.77	9.95	2.88	11.87	3.68	12.71	3.53
3.21	0.25	7.26	1.97	10.10	3.04	11.94	3.64	12.73	3.54
3.50	0.31	7.30	2.08	10.29	3.25	11.99	3.60	12.78	3.56
3.74	0.38	7.51	2.20	10.34	3.43	12.04	3.58	12.82	3.58
3.58	0.41	7.62	2.28	10.39	3.56	12.08	3.55	12.84	3.60
4.09	0.43	7.84	2.35	10.45	3.65	12.11	3.55	12.89	3.69
4.30	0.45	7.95	2.48	10.56	3.80	12.13	3.54	12.92	3.66
4.51	0.56	8.05	2.60	10.69	3.98	12.16	3.53	12.94	3.73
4.82	0.69	8.17	2.69	10.81	4.08	12.20	3.52	12.99	3.87
4.93	0.72	8.36	2.80	10.89	4.12	12.23	3.51	13.07	3.96
5.14	0.77	8.46	2.86	11.01	4.16	12.27	3.51	13.20	4.05
5.27	0.85	8.65	2.91	11.08	4.76	12.30	3.50	13.28	4.51
5.40	0.95	8.79	2.93	11.21	4.16	12.34	3.50	13.35	4.78
5.66	1.03	9.01	2.92	11.26	4.16	12.36	3.50		
5.82	1.06	9.10	2.89	11.35	4.10	12.38	3.50		
6.05	1.07	9.21	2.84	11.42	4.05	12.42	3.50		
6.20	1.04	9.37	2.78	11.50	4.00	12.48	3.50		

Data 7/4/55: Field perp. trig. and bin.; P = 90 mm Hg.; Octal N; Hall (w+,g-); current (b+,r-) = 0.0250 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
2.84	0.00	6.67	0.25	10.41	1.35	12.14	1.33	12.78	1.28
2.92	0.02	6.69	0.26	10.59	1.50	12.18	1.31	12.80	1.28
3.14	0.03	6.81	0.32	10.69	1.58	12.20	1.31	12.84	1.29
3.44	0.03	6.90	0.37	10.74	1.61	12.21	1.30	12.86	1.29
3.52	0.04	6.99	0.46	10.85	1.68	12.22	1.30	12.89	1.30
3.74	0.06	7.17	0.60	10.95	1.70	12.24	1.30	12.94	1.31
4.02	0.07	7.29	0.68	11.05	1.72	12.26	1.30	12.99	1.34
4.30	0.08	7.56	0.79	11.13	1.72	12.28	1.29	13.03	1.36
4.58	0.11	7.95	0.91	11.21	1.72	12.30	1.29	13.07	1.40
4.86	0.15	8.21	1.03	11.27	1.72	12.34	1.28	13.11	1.44
5.01	0.16	8.65	1.08	11.33	1.70	12.37	1.28	13.15	1.50
5.27	0.20	9.01	1.05	11.36	1.69	12.40	1.27	13.20	1.56
5.40	0.26	9.17	1.00	11.45	1.65	12.42	1.27	13.27	1.69
5.54	0.29	9.42	0.90	11.54	1.60	12.47	1.28	13.34	1.84
5.82	0.31	9.63	0.87	11.63	1.56	12.52	1.28	13.41	2.00
6.05	0.31	9.74	0.87	11.72	1.51	12.56	1.28	13.42	2.15
6.30	0.27	9.83	0.87	11.81	1.47	12.60	1.28	13.55	2.34
6.40	0.26	9.89	0.88	11.90	1.43	12.64	1.28		
6.44	0.25	10.02	0.94	11.96	1.40	12.68	1.28		
6.47	0.25	10.13	1.02	12.02	1.38	12.71	1.28		
6.57	0.25	10.29	1.21	12.10	1.34	12.75	1.28		

Data 7/4/55: Field perp. trig. and bin.; P = 90 mm Hg.; Octal S; Hall (g+,w-); current (b+,r-) = 0.0250 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
2.65	0.10	5.53	0.72	7.40	1.54	9.21	2.06	11.81	2.68
2.77	0.13	5.55	0.73	7.46	1.58	9.42	1.99	11.94	2.60
3.00	0.15	5.60	0.75	7.52	1.60	9.59	1.95	12.06	2.56
3.15	0.17	5.67	0.76	7.58	1.64	9.78	2.00	12.14	2.51
3.37	0.19	5.85	0.78	7.63	1.65	9.89	2.10	12.20	2.50
3.44	0.21	6.05	0.79	7.73	1.66	10.02	2.54	12.34	2.50
3.46	0.24	6.12	0.78	7.84	1.71	10.38	2.54	12.46	2.50
3.60	0.25	6.19	0.76	7.95	1.75	10.53	2.73	12.80	2.50
3.75	0.28	6.32	0.79	7.97	1.80	10.71	2.90	12.86	2.51
3.90	0.30	6.57	0.74	8.06	1.85	10.77	2.98	12.91	2.54
4.05	0.30	6.63	0.76	8.09	1.90	10.79	2.99	12.95	2.58
4.23	0.32	6.69	0.80	8.16	1.94	10.85	3.01	12.99	2.63
4.30	0.34	6.74	0.86	8.21	1.99	10.91	3.04	13.04	2.70
4.44	0.37	6.80	0.92	8.27	2.02	10.99	3.05	13.11	2.81
4.58	0.42	6.90	1.00	8.36	2.05	11.07	3.06	13.18	2.95
4.72	0.47	6.94	1.09	8.41	2.08	11.13	3.06	13.23	3.10
4.86	0.50	7.04	1.16	8.51	2.11	11.21	3.06	13.31	3.32
5.14	0.54	7.05	1.24	8.61	2.14	11.26	3.06	13.37	3.50
5.27	0.60	7.11	1.29	8.70	2.15	11.31	3.03	13.44	3.71
5.29	0.65	7.17	1.36	8.84	2.15	11.40	2.98	13.49	3.81
5.40	0.68	7.23	1.51	8.97	2.15	11.51	2.90	13.53	4.02
5.47	0.70	7.29	1.48	9.02	2.13	11.64	2.80	13.58	4.20
5.48	0.72	7.35	1.51	9.13	2.10	11.72	2.74		

Data 7/4/55: Field perp. trig. and bin.; P = 41 mm Hg.; Octal N; Hall (w+,g-); current (b+,r-) = 0.0200 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
2.90	0.00	6.95	0.30	10.36	0.98	12.05	1.05	12.91	0.99
3.14	0.02	7.29	0.51	10.47	1.08	12.10	1.03	12.95	1.00
3.44	0.02	7.62	0.60	10.55	1.15	12.16	1.01	12.99	1.01
3.60	0.04	7.90	0.68	10.67	1.21	12.19	1.00	13.04	1.04
3.88	0.05	8.16	0.77	10.78	1.27	12.24	0.99	13.07	1.06
4.16	0.05	8.36	0.83	10.91	1.31	12.26	0.99	13.12	1.10
4.35	0.05	8.74	0.84	10.99	1.34	12.29	0.99	13.15	1.14
4.58	0.07	8.92	0.83	11.11	1.35	12.33	0.99	13.20	1.19
4.75	0.11	9.10	0.80	11.21	1.35	12.38	0.98	13.25	1.25
5.00	0.11	9.34	0.74	11.30	1.35	12.43	0.98	13.33	1.35
5.27	0.15	9.54	0.70	11.35	1.33	12.47	0.98	13.37	1.43
5.40	0.19	9.63	0.67	11.43	1.31	12.51	0.98	13.41	1.50
5.68	0.22	9.76	0.66	11.54	1.26	12.57	0.98	13.46	1.61
5.98	0.24	9.86	0.66	11.61	1.24	12.64	0.98	13.52	1.75
6.18	0.22	9.89	0.67	11.70	1.19	12.69	0.98	13.54	1.79
6.31	0.20	9.99	0.70	11.80	1.15	12.75	0.98		
6.55	0.18	10.07	0.75	11.87	1.11	12.82	0.98		
6.81	0.19	10.24	0.86	11.97	1.08	12.87	0.98		

Data 7/4/55: Field perp. trig. and bin.; P = 41 mm Hg.; Octal S; Hall (g+,w-); current (b+,r-) = 0.0200 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
2.99	0.12	6.75	0.63	9.83	1.55	11.72	2.20	12.97	2.01
3.14	0.13	6.88	0.75	9.89	1.58	11.78	2.15	13.00	2.06
3.29	0.14	7.17	1.05	10.13	1.78	11.90	2.10	13.07	2.14
3.44	0.16	7.40	1.19	10.35	2.00	12.00	2.05	13.12	2.20
3.67	0.21	7.52	1.28	10.50	2.20	12.10	2.01	13.17	2.30
3.88	0.24	7.80	1.34	10.65	2.32	12.16	2.00	13.23	2.41
4.16	0.25	8.05	1.46	10.86	2.44	12.20	1.99	13.27	2.48
4.30	0.26	8.35	1.64	10.99	2.46	12.28	1.99	13.37	2.74
4.58	0.34	8.50	1.70	11.10	2.47	12.35	1.98	13.47	3.01
4.86	0.41	8.65	1.72	11.24	2.46	12.43	1.98	13.56	3.24
5.27	0.51	8.78	1.74	11.30	2.45	12.52	1.98	13.62	3.42
5.66	0.60	9.09	1.72	11.37	2.43	12.60	1.97		
5.82	0.62	9.25	1.65	11.46	2.32	12.68	1.96		
6.12	0.64	9.55	1.56	11.57	2.31	12.82	1.96		
6.45	0.59	9.71	1.55	11.65	2.25	12.89	1.96		

Data 7/4/55: Field perp. trig. and bin.; P = 13 mm Hg.; Octal N; Hall (w+,g-); current (b+,r-) = 0.0200 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
3.07	0.01	6.69	0.18	10.29	0.92	12.45	0.96	13.51	1.77
3.21	0.02	6.81	0.21	10.50	1.12	12.52	0.96	13.59	1.97
3.51	0.02	7.05	0.41	10.70	1.25	12.55	0.96		
3.74	0.04	7.29	0.51	10.85	1.33	12.60	0.96		
4.02	0.05	7.48	0.60	11.11	1.37	12.70	0.96		
4.35	0.05	7.97	0.73	11.27	1.37	12.78	0.96		
4.65	0.09	8.43	0.85	11.30	1.37	12.87	0.96		
4.90	0.12	8.74	0.86	11.36	1.35	12.96	0.96		
5.14	0.12	9.01	0.85	11.51	1.29	13.00	0.99		
5.40	0.18	9.25	0.77	11.66	1.21	13.05	1.01		
3.65	0.23	9.49	0.70	11.99	1.06	13.10	1.05		
5.95	0.25	9.70	0.66	12.09	1.03	13.18	1.12		
6.17	0.24	9.90	0.65	12.19	0.99	13.25	1.20		
6.31	0.21	9.98	0.68	12.28	0.97	13.33	1.31		
6.50	0.19	10.10	0.76	12.38	0.96	13.43	1.56		

Data 7/4/55: Field perp. trig. and bin.; P = 13 mm Hg.; Octal S; Hall (g+,w-); current (b+,r-) = 0.0200 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
2.69	0.07	6.57	0.58	9.66	1.51	11.48	2.36	12.71	1.89
2.84	0.10	6.75	0.61	9.77	1.51	11.58	2.30	12.77	1.88
3.06	0.14	7.05	0.92	9.83	1.51	11.67	2.23	12.84	1.88
3.42	0.15	7.29	1.17	9.89	1.53	11.76	2.15	12.93	1.89
3.72	0.21	7.45	1.27	10.13	1.74	11.85	2.09	12.96	1.91
3.88	0.24	7.73	1.32	10.29	1.93	11.95	2.03	13.01	1.94
4.17	0.25	7.90	1.36	10.39	2.06	12.03	2.00	13.09	1.98
4.58	0.30	8.05	1.45	10.58	2.26	12.10	1.96	13.08	2.02
4.72	0.38	8.28	1.62	10.69	2.31	12.16	1.95	13.12	2.08
4.79	0.41	8.46	1.69	10.80	2.41	12.22	1.94	13.16	2.15
5.07	0.42	8.65	1.73	10.93	2.46	12.30	1.94	13.23	2.31
5.27	0.50	8.92	1.74	11.07	2.48	12.40	1.94	13.33	2.53
5.46	0.57	9.09	1.72	11.19	2.48	12.51	1.94	13.41	2.72
5.75	0.61	9.21	1.67	11.28	2.97	12.56	1.93	13.45	2.86
6.05	0.65	9.35	1.64	11.35	2.45	12.60	1.92	13.54	3.08
6.38	0.60	9.48	1.56	11.42	2.41	12.66	1.90		

Data 7/4/55: Field perp. trig. and bin.; P = 2.94 cm Oct-oil S; Octal N; Hall (w+,g-); current (b+,r-) = 0.0200 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
3.29	0.01	6.36	0.20	8.51	0.87	10.93	1.38	12.61	0.94
3.59	0.03	6.44	0.19	8.74	0.87	11.05	1.40	12.69	0.94
3.89	0.05	6.57	0.18	8.93	0.86	11.21	1.40	12.73	0.93
4.31	0.05	6.69	0.16	9.09	0.84	11.31	1.39	12.82	0.93
4.75	0.11	6.75	0.16	9.17	0.81	11.41	1.35	12.87	0.93
4.90	0.12	6.82	0.19	9.34	0.74	11.48	1.32	12.96	0.93
5.10	0.12	6.93	0.25	9.56	0.67	11.58	1.27	13.03	0.95
5.14	0.15	7.00	0.30	9.69	0.65	11.75	1.17	13.09	0.97
5.24	0.15	7.11	0.38	9.80	0.64	11.90	1.10	13.15	1.02
5.37	0.18	7.17	0.44	9.95	0.66	12.04	1.04	13.20	1.08
5.46	0.21	7.29	0.53	10.04	0.71	12.12	1.00	13.23	1.14
5.66	0.22	7.41	0.59	10.16	0.80	12.18	0.98	13.28	1.24
5.80	0.25	7.74	0.65	10.27	0.91	12.26	0.96	13.34	1.37
5.92	0.25	7.95	0.72	10.39	1.04	12.32	0.95	13.41	1.50
6.05	0.25	8.07	0.76	10.49	1.15	12.36	0.95	13.50	1.72
6.18	0.25	8.16	0.80	10.64	1.25	12.94	0.94	13.58	1.94
6.25	0.23	8.27	0.83	10.81	1.34	12.52	0.94		

Data 7/4/55: Field perp. trig. and bin.; P = 2.94 cm Oct-oil S; Octal S; Hall (g+,w-); current (b+,r-) = 0.0200 Amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
2.58	0.09	5.67	0.62	9.45	1.58	11.51	2.40	12.72	1.87
2.80	0.10	5.79	0.64	9.63	1.52	11.61	2.31	12.78	1.85
2.99	0.13	6.02	0.65	9.80	1.51	11.78	2.17	12.87	1.85
3.14	0.14	6.18	0.62	9.90	1.54	11.90	2.07	13.00	1.88
3.30	0.15	6.31	0.58	9.99	1.60	12.00	2.01	13.05	1.94
3.44	0.20	6.69	0.58	10.19	1.83	12.03	2.00	13.09	2.00
3.81	0.25	6.75	0.66	10.34	2.10	12.08	1.97	13.15	2.11
4.02	0.25	6.94	0.90	10.59	2.35	12.15	1.95	13.21	2.23
4.30	0.27	7.29	1.21	10.73	2.45	12.21	1.95	13.33	2.51
4.58	0.34	7.57	1.33	10.85	2.52	12.23	1.95	13.37	2.65
4.72	0.40	7.95	1.44	10.99	2.54	12.39	1.95	13.41	2.81
5.00	0.42	8.23	1.63	11.05	2.55	12.46	1.95	13.55	3.25
5.14	0.45	8.51	1.75	11.19	2.55	12.56	1.94		
5.24	0.50	8.79	1.79	11.28	2.54	12.59	1.93		
5.40	0.56	9.15	1.75	11.33	2.51	12.64	1.91		
5.46	0.60	9.33	1.65	11.44	2.46	12.68	1.89		

Data 7/12/55; Field parallel binary axis; P = 757 mm Hg.; Octal S; Hall (b+,r-); current (w+,g-) = 0.0418 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
3.14	0.05	5.79	0.31	8.08	0.94	9.60	1.46	10.83	1.85
3.28	0.06	5.92	0.33	8.17	0.94	9.63	1.50	10.89	1.85
3.42	0.07	6.06	0.34	8.25	0.94	9.70	1.53	10.95	1.85
3.47	0.09	6.18	0.36	8.28	0.94	9.74	1.55	11.01	1.85
3.59	0.10	6.31	0.38	8.36	0.94	9.80	1.59	11.09	1.85
3.74	0.11	6.38	0.43	8.45	0.94	9.83	1.60	11.15	1.85
3.77	0.12	6.48	0.48	8.51	0.94	9.89	1.64	11.23	1.85
3.90	0.12	6.65	0.56	8.58	0.94	9.95	1.65	11.30	1.85
4.05	0.12	6.69	0.60	8.65	0.94	9.88	1.69	11.36	1.85
4.23	0.12	6.81	0.65	8.23	0.95	10.01	1.71	11.44	1.85
4.31	0.14	7.00	0.69	8.27	0.96	10.13	1.73	11.52	1.85
4.44	0.17	7.05	0.72	8.84	0.99	10.19	1.75	11.57	1.84
4.57	0.20	7.15	0.77	8.92	1.02	10.27	1.77	11.65	1.83
4.68	0.23	7.20	0.80	9.01	1.06	10.34	1.78	11.72	1.82
4.72	0.25	7.30	0.83	9.09	1.10	10.39	1.80	11.78	1.81
4.86	0.27	7.40	0.86	9.13	1.14	10.44	1.80	11.87	1.80
5.00	0.29	7.51	0.89	9.20	1.19	10.49	1.81	11.91	1.78
5.07	0.30	7.68	0.90	9.25	1.22	10.54	1.82	12.02	1.76
5.15	0.31	7.80	0.92	9.33	1.27	10.59	1.83	12.08	1.75
5.27	0.31	7.85	0.93	9.37	1.31	10.64	1.83	12.14	1.75
5.40	0.31	7.92	0.94	9.45	1.35	10.69	1.84	12.20	1.75
5.47	0.31	7.98	0.94	9.49	1.39	10.75	1.85	12.26	1.75
5.60	0.31	8.05	0.94	9.56	1.43	10.77	1.85	12.32	1.75

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Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
12.42	1.75	12.70	1.79	12.99	1.87	13.21	2.03	13.42	2.24
12.48	1.75	12.77	1.80	13.04	1.90	13.26	2.06	13.45	2.26
12.52	1.76	12.82	1.82	13.09	1.93	13.29	2.10		
12.60	1.76	12.89	1.84	13.13	1.96	13.34	2.14		
12.65	1.78	12.94	1.85	13.17	1.99	13.39	2.18		

Data 7/12/55; Field parallel binary axis; P = 757 mm Hg.; Octal N; Hall (r+,b-); current (w+,g-) = 0.0418 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
2.84	0.15	5.66	0.62	9.37	2.06	11.39	2.68	12.46	2.53
3.05	0.16	5.86	0.65	9.53	2.20	11.51	2.66	12.50	2.54
3.20	0.19	6.11	0.70	9.70	2.35	11.60	2.65	12.58	2.55
3.40	0.22	6.44	0.82	9.85	2.48	11.67	2.63	12.60	2.56
3.49	0.25	6.69	0.91	9.98	2.56	11.75	2.61	12.65	2.57
3.59	0.27	6.85	1.12	10.13	2.63	11.81	2.59	12.71	2.59
3.74	0.28	7.17	1.26	10.24	2.66	11.90	2.57	12.73	2.60
3.88	0.29	7.40	1.33	10.29	2.69	11.98	2.56	12.78	2.63
4.02	0.29	7.55	1.36	10.39	2.70	12.02	2.55	12.87	2.65
4.16	0.31	7.63	1.38	10.49	2.71	12.06	2.54	12.92	2.67
4.30	0.34	7.84	1.40	10.59	2.73	12.10	2.53	13.00	2.71
4.33	0.39	7.96	1.40	10.70	2.74	12.15	2.52	13.07	2.56
4.51	0.44	8.17	1.40	10.77	2.74	12.18	2.52	13.17	2.84
4.58	0.46	8.40	1.40	10.85	2.74	12.24	2.52	13.28	2.94
4.72	0.50	8.52	1.43	10.97	2.74	12.29	2.51	13.34	3.01
4.86	0.54	8.65	1.48	11.07	2.73	12.32	2.51	13.41	3.09
5.14	0.57	8.83	1.58	11.13	2.72	12.35	2.51	13.47	3.16
5.27	0.58	9.01	1.70	11.24	2.71	12.39	2.51	13.53	3.25
5.47	0.59	9.21	1.90	11.33	2.70	12.42	2.52		

Data 7/12/55: Field parallel binary axis; P = 451 mm Hg.; Octal S; Hall (b+,r-); current (w+,g-) = 0.0418 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
3.14	0.05	7.06	0.75	9.35	1.30	11.11	1.90	12.34	1.74
3.52	0.06	7.18	0.80	9.41	1.35	11.27	1.90	12.38	1.74
3.60	0.09	7.29	0.82	9.56	1.43	11.32	1.90	12.42	1.74
3.81	0.11	7.40	0.85	9.72	1.56	11.38	1.90	12.48	1.75
4.02	0.12	7.45	0.88	9.95	1.70	11.45	1.90	12.54	1.75
4.25	0.12	7.53	0.90	9.98	1.72	11.48	1.89	12.55	1.75
4.47	0.17	7.60	0.92	10.07	1.75	11.53	1.88	12.59	1.76
4.72	0.22	7.70	0.94	10.16	1.79	11.57	1.87	12.65	1.76
4.86	0.26	7.75	0.95	10.20	1.82	11.62	1.86	12.73	1.78
5.12	0.30	7.85	0.96	10.26	1.83	11.66	1.85	12.82	1.80
5.30	0.32	7.95	0.96	10.30	1.85	11.78	1.82	12.91	1.82
5.53	0.32	8.06	0.96	10.37	1.86	11.90	1.80	13.05	1.89
5.78	0.32	8.15	0.96	10.44	1.87	12.04	1.77	13.17	1.95
5.93	0.34	8.26	0.95	10.50	1.88	12.06	1.76	13.25	2.01
6.20	0.36	8.38	0.95	10.59	1.89	12.10	1.75	13.35	2.11
6.52	0.42	8.56	0.94	10.73	1.90	12.15	1.75	13.44	2.23
6.65	0.50	8.74	0.95	10.79	1.90	12.19	1.75	13.56	2.37
6.70	0.56	8.85	0.99	10.87	1.90	12.22	1.75	13.57	2.39
6.81	0.63	9.03	1.05	10.95	1.90	12.25	1.75		
6.99	0.70	9.21	1.18	11.05	1.90	12.28	1.75		

Data 7/12/55: Field parallel binary axis; P = 451 mm Hg.
Octal N; Hall (r+,b-); current (w+,g-) = 0.0418 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
2.70	0.14	5.30	0.59	8.50	1.42	10.49	2.78	12.15	2.52
2.84	0.15	5.40	0.59	8.60	1.44	10.59	2.79	12.17	2.52
3.10	0.17	5.60	0.60	8.65	1.45	10.73	2.80	12.22	2.51
3.30	0.21	5.78	0.61	8.75	1.51	10.77	2.80	12.25	2.50
3.52	0.25	5.85	0.63	8.92	1.59	10.83	2.80	12.38	2.50
3.74	0.29	5.94	0.66	9.02	1.69	10.90	2.80	12.50	2.52
3.88	0.30	6.18	0.70	9.17	1.85	11.05	2.79	12.62	2.56
4.00	0.30	6.32	0.74	9.25	1.95	11.09	2.78	12.67	2.59
4.02	0.30	6.57	0.83	9.40	2.07	11.21	2.76	12.73	2.60
4.16	0.30	6.70	0.97	9.49	2.17	11.30	2.74	12.77	2.61
4.25	0.30	6.93	1.10	9.56	2.25	11.48	2.70	12.82	2.64
4.32	0.32	7.05	1.21	9.70	2.36	11.69	2.65	12.89	2.66
4.44	0.35	7.28	1.28	9.77	2.45	11.78	2.62	12.99	2.70
4.58	0.40	7.42	1.35	9.90	2.55	11.93	2.58	13.04	2.74
4.65	0.45	7.60	1.38	10.01	2.62	11.96	2.57	13.13	2.79
4.75	0.49	7.73	1.41	10.07	2.65	11.99	2.56	13.20	2.85
4.86	0.52	7.95	1.43	10.16	2.69	12.02	2.55	13.30	2.95
4.95	0.55	8.16	1.44	10.24	2.72	12.04	2.55	13.37	3.03
5.02	0.56	8.36	1.43	10.29	2.74	12.09	2.54	13.48	3.18
5.27	0.58	8.46	1.42	10.39	2.76	12.12	2.54	13.52	3.24

Data 7/12/55: Field parallel binary axis; P = 225 mm Hg.; Octal S; Hall (b+,r-); current (w+,g-) = 0.0418 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
3.25	0.05	5.79	0.34	9.13	1.10	11.33	1.94	12.44	1.73
3.48	0.06	6.05	0.35	9.50	1.41	11.39	1.94	12.46	1.73
3.73	0.08	6.31	0.37	9.70	1.55	11.45	1.93	12.52	1.75
3.86	0.11	6.57	0.42	9.83	1.66	11.51	1.91	12.61	1.76
4.04	0.12	6.82	0.60	9.89	1.71	11.60	1.90	12.71	1.78
4.30	0.13	7;04	0.71	9.95	1.75	11.63	1.90	12.82	1.79
4.33	0.13	7.29	0.82	10.19	1.84	11.72	1.87	12.97	1.82
4.56	0.15	7.62	0.92	10.39	1.90	11.81	1.85	13.07	1.86
4.75	0.22	7.97	1.00	10.59	1.92	11.90	1.81	13.18	1.93
4.90	0.26	8.36	0.97	10.73	1.93	12.02	1.78	13.29	2.05
5.14	0.30	8.57	0.95	10.85	1.94	12.14	1.75	13.39	2.15
5.40	0.34	8.74	0.95	11.02	1.94	12.24	1.74	13.47	2.25
5.60	0.34	8.93	1.00	11.17	1.94	12.34	1.73	13.58	2.43

Data 7/12/55: Field parallel binary axis; P = 225 mm Hg.; Octal N; Hall (r+,b-); current (w+,g-) = 0.0418 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
2.69	0.14	5.79	0.61	7.84	1.43	9.65	2.43	12.10	2.49
2.84	0.15	5.92	0.63	7.95	1.45	10.50	2.68	12.31	2.48
3.29	0.19	6.05	0.66	8.01	1.45	10.34	2.81	12.43	2.48
3.44	0.22	6.18	0.70	8.10	1.45	10.50	2.85	12.46	2.49
3.70	0.29	6.31	0.71	8.26	1.45	10.59	2.85	12.54	2.51
3.88	0.30	6.44	0.75	8.36	1.44	10.69	2.85	12.64	2.55
4.10	0.30	6.57	0.81	8.46	1.43	10.85	2.85	12.74	2.58
4.30	0.30	6.70	0.96	8.53	1.43	10.95	2.85	12.86	2.61
4.44	0.35	6.82	1.04	8.65	1.43	10.01	2.85	13.04	2.69
4.72	0.42	6.93	1.14	8.74	1.46	11.11	2.83	13.21	2.81
4.86	0.53	7.05	1.23	8.83	1.51	11.24	2.80	13.31	2.91
5.00	0.56	7.18	1.29	8.92	1.56	11.39	2.76	13.37	3.00
5.14	0.59	7.35	1.33	9.01	1.66	11.60	2.70	13.51	3.21
5.33	0.60	7.42	1.36	9.17	1.80	11.78	2.64	13.55	3.30
5.53	0.61	7.61	1.39	9.29	1.96	11.95	2.58	13.58	3.36
5.66	0.61	7.67	1.41	9.56	2.25	12.10	2.52		

Data 7/12/55: Field parallel binary axis; P = 90 mm Hg.; Octal S; Hall (b+,r-); current (w+,g-) = 0.0418 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
2.55	0.02	6.18	0.35	8.37	0.98	10.58	1.98	12.38	1.71
2.70	0.03	6.44	0.38	8.51	0.95	10.69	1.99	12.48	1.73
2.99	0.05	6.57	0.45	8.65	0.95	10.85	1.99	12.59	1.75
3.28	0.06	6.81	0.61	8.74	0.95	11.01	1.99	12.70	1.77
3.51	0.09	6.99	0.71	8.87	0.96	11.24	1.98	12.84	1.79
3.87	0.13	7.11	0.79	9.01	1.02	11.27	1.96	12.93	1.80
4.02	0.14	7.29	0.83	9.09	1.10	11.45	1.92	13.02	1.81
4.43	0.14	7.40	0.86	9.33	1.31	11.57	1.89	13.20	1.91
4.61	0.20	7.51	0.90	9.55	1.48	11.72	1.85	13.36	2.10
4.86	0.25	7.62	0.95	9.67	1.60	11.93	1.77	13.52	2.36
5.14	0.31	7.73	0.99	9.86	1.74	12.04	1.74	13.61	2.53
5.40	0.35	7.95	1.01	10.03	1.83	12.24	1.71		
5.66	0.35	8.06	1.01	10.22	1.90	12.28	1.71		
6.05	0.35	8.21	1.00	10.34	1.95	12.33	1.71		

Data 7/12/55: Field parallel binary axis; P = 90 mm Hg.; Octal N; Hall (r+,b-); current (w+,g-) = 0.0418 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
2.69	0.12	6.06	0.70	8.26	1.45	10.05	2.72	12.28	2.45
2.85	0.15	6.31	0.72	8.37	1.43	10.19	2.80	12.38	2.45
3.29	0.19	6.45	0.77	8.55	1.42	10.47	2.88	12.48	2.49
3.83	0.30	6.69	0.91	8.64	1.43	10.73	2.90	12.69	2.55
4.02	0.30	6.81	1.08	8.77	1.49	10.87	2.90	12.89	2.60
4.32	0.30	6.93	1.22	8.92	1.56	11.05	2.87	13.07	2.65
4.58	0.44	7.11	1.30	9.05	1.69	11.09	2.81	13.25	2.74
4.86	0.54	7.29	1.36	9.17	1.80	11.29	2.77	13.49	3.16
5.09	0.59	7.45	1.40	9.25	1.93	11.45	2.73	13.63	3.48
5.29	0.62	7.62	1.44	9.37	2.05	11.63	2.66	13.65	3.50
5.53	0.62	7.73	1.46	9.49	2.20	11.78	2.60		
5.72	0.62	7.96	1.48	9.80	2.54	11.97	2.52		
5.90	0.65	8.15	1.48	9.92	2.63	12.13	2.47		

Data 7/12/55: Field parallel binary axis; P = 41 mm Hg.; Octal S; Hall (b+,r-); current (w+,g-) = 0.0418 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
3.07	0.04	5.79	0.34	8.26	1.01	10.29	1.95	12.30	1.69
3.37	0.06	5.86	0.34	8.41	0.98	10.37	1.96	12.42	1.70
3.70	0.11	6.05	0.35	8.56	0.94	10.50	1.97	12.52	1.72
3.88	0.13	6.20	0.36	8.74	0.93	10.71	1.99	12.64	1.75
4.02	0.13	6.45	0.40	8.88	0.95	10.81	1.99	12.73	1.76
4.43	0.14	6.69	0.54	8.97	0.98	10.91	1.99	12.84	1.76
4.57	0.13	6.81	0.66	9.09	1.06	11.09	1.99	12.93	1.76
4.72	0.16	6.93	0.75	9.29	1.23	11.27	1.99	13.01	1.76
4.79	0.22	7.17	0.81	9.42	1.35	11.42	1.98	13.10	1.78
5.00	0.22	7.29	0.86	9.63	1.54	11.46	1.95	13.17	1.83
5.14	0.29	7.46	0.92	9.70	1.63	11.60	1.90	13.23	1.89
5.27	0.34	7.61	0.96	9.80	1.69	11.75	1.85	13.31	1.97
5.39	0.35	7.84	1.01	10.01	1.83	11.91	1.79	13.37	2.08
5.52	0.35	8.00	1.04	10.03	1.87	12.06	1.73	13.43	2.19
5.65	0.35	8.15	1.04	10.24	1.91	12.18	1.70	13.50	2.31

Data 7/12/55: Field parallel binary axis; P = 41 mm Hg.; Octal N; Hall (r+,b-); current (w+,g-) = 0.0418 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
2.99	0.13	5.66	0.63	7.96	1.50	10.02	2.75	12.60	2.52
3.05	0.16	5.79	0.63	8.08	1.50	10.13	2.80	12.70	2.55
3.18	0.16	5.92	0.66	8.21	1.49	10.24	2.85	12.73	2.56
3.44	0.20	6.05	0.70	8.36	1.46	10.35	2.89	12.74	2.56
3.59	0.25	6.18	0.71	8.41	1.43	10.54	2.90	12.76	2.56
3.74	0.29	6.32	0.73	8.51	1.42	10.71	2.96	12.82	2.57
3.90	0.30	6.45	0.77	8.65	1.42	10.99	2.88	12.91	2.58
4.02	0.30	6.69	0.85	8.70	1.43	11.21	2.85	12.94	2.59
4.18	0.30	6.75	0.89	8.83	1.46	11.32	2.83	13.01	2.60
4.32	0.30	6.92	1.01	8.92	1.51	11.36	2.79	13.09	2.61
4.51	0.36	7.05	1.26	9.01	1.59	11.51	2.71	13.17	2.66
4.72	0.45	7.17	1.33	9.09	1.67	11.72	2.64	13.24	2.72
4.86	0.52	7.29	1.36	9.17	1.76	11.90	2.55	13.31	2.81
5.00	0.56	7.40	1.39	9.33	1.98	12.06	2.48	13.46	3.08
5.14	0.60	7.52	1.42	9.43	2.13	12.18	2.43	13.49	3.12
5.27	0.63	7.62	1.45	9.56	2.29	12.30	2.42		
5.40	0.64	7.74	1.48	9.80	2.56	12.41	2.43		
5.53	0.64	7.90	1.50	9.95	2.70	12.51	2.47		

Data 7/12/55: Field parallel binary axis; P = 20.9 cm Oct-oil S; Octal S; Hall (b+,r-); current (w+,g-) = 0.0418 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
3.29	0.06	6.37	0.36	8.83	0.94	10.59	2.02	12.22	1.69
3.45	0.07	6.47	0.36	8.92	0.95	10.69	2.03	12.28	1.69
3.59	0.08	6.68	0.41	9.01	0.99	10.72	2.03	12.40	1.70
3.74	0.10	6.72	0.52	9.09	1.05	10.77	2.04	12.48	1.72
3.81	0.12	6.87	0.64	9.17	1.13	10.81	2.04	12.54	1.74
4.02	0.13	7.00	0.72	9.29	1.25	10.85	2.04	12.60	1.77
4.09	0.13	7.16	0.79	9.41	1.36	10.93	2.04	12.66	6.78
4.24	0.13	7.29	0.84	9.49	1.47	10.97	2.04	12.75	1.79
4.37	0.13	7.40	0.88	9.62	1.58	11.02	2.04	12.82	1.79
4.45	0.13	7.51	0.92	9.70	1.66	11.09	2.03	12.89	1.75
4.65	0.20	7.57	0.95	9.77	1.74	11.17	2.03	12.95	1.77
4.73	0.25	7.73	1.00	9.86	1.79	11.24	2.03	13.01	1.76
4.86	0.28	7.84	1.04	9.95	1.83	11.33	2.02	13.07	1.76
5.13	0.31	7.95	1.06	10.01	1.87	11.39	2.01	13.13	1.77
5.25	0.34	8.06	1.07	10.07	1.91	11.45	2.00	13.18	1.80
5.40	0.36	8.16	1.07	10.15	1.95	11.51	1.98	13.25	1.86
5.53	0.36	8.26	1.06	10.24	1.96	11.60	1.95	13.31	1.95
5.66	0.36	8.36	1.03	10.29	1.99	11.70	1.92	13.37	2.06
5.79	0.36	8.46	1.00	10.35	2.00	11.81	1.84	13.44	2.20
5.92	0.35	8.56	0.97	10.42	2.00	11.93	1.78	13.53	2.37
6.08	0.35	8.65	0.95	10.49	2.01	12.02	1.73		
6.20	0.36	8.74	0.94	10.54	2.01	12.14	1.70		

Data 7/12/55: Field parallel binary axis; P = 20.9 cm Oct-oil S; Octal N; Hall (r+,b-); current (w+,g-) = 0.0418 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
2.84	0.15	6.05	0.70	8.46	1.43	10.97	2.89	12.75	2.59
2.99	0.16	6.25	0.71	8.58	1.40	11.13	2.87	12.85	2.60
3.14	0.17	6.44	0.76	8.66	1.40	11.27	2.85	12.91	2.60
3.29	0.20	6.57	0.85	8.83	1.43	11.33	2.83	12.99	2.59
3.45	0.23	6.69	1.00	8.92	1.51	11.45	2.80	13.04	2.58
3.59	0.26	6.90	1.17	9.09	1.65	11.52	2.77	13.07	2.58
3.74	0.30	7.05	1.29	9.17	1.83	11.63	2.73	13.15	2.59
4.02	0.31	7.17	1.35	9.41	2.11	11.77	2.66	13.23	2.65
4.16	0.31	7.34	1.40	9.56	2.32	11.87	2.60	13.29	2.75
4.30	0.30	7.56	1.46	9.80	2.61	12.02	2.51	13.36	2.88
4.44	0.35	7.73	1.52	10.01	2.78	12.20	2.43	13.43	3.03
4.72	0.49	7.85	1.55	10.24	2.88	12.30	2.43	13.50	3.20
5.10	0.60	7.96	1.55	10.39	2.92	12.38	2.44	13.52	3.25
5.28	0.64	8.12	1.52	10.56	2.93	12.47	2.48		
5.55	0.63	8.21	1.50	10.73	2.93	12.54	2.51		
5.92	0.67	8.36	1.46	10.83	2.92	12.62	2.54		

Data 7/12/55: Field parallel binary axis; P = 3.3 cm Oct-oil S; Octal S; Hall (b+,r-); current (w+,g-) = 0.418 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
3.14	0.05	6.57	0.40	9.05	0.99	10.49	2.03	12.34	1.66
3.45	0.06	6.70	0.53	9.13	1.06	10.64	2.04	12.41	1.70
3.60	0.09	6.82	0.49	9.25	1.16	10.73	2.05	12.50	1.73
3.74	0.11	6.94	0.73	9.33	1.26	10.81	2.05	12.58	1.75
4.00	0.14	7.11	0.80	9.49	1.44	11.01	2.04	12.67	1.77
4.16	0.14	7.29	0.85	9.60	1.56	11.09	2.05	12.78	1.78
4.44	0.13	7.35	0.90	9.64	1.64	11.21	2.04	12.86	1.76
4.58	0.15	7.51	0.94	9.70	1.69	11.30	2.04	12.95	1.75
4.72	0.21	7.62	0.98	9.80	1.75	11.39	2.03	12.97	1.72
4.90	0.28	7.84	1.04	9.83	1.79	11.51	2.01	13.05	1.70
5.14	0.33	7.95	1.08	9.89	1.83	11.61	1.98	13.12	1.69
5.40	0.38	8.05	1.08	9.95	1.85	11.72	1.93	13.18	1.70
5.55	0.38	8.11	1.10	10.01	1.88	11.81	1.88	13.23	1.74
5.68	0.36	8.26	1.10	10.07	1.91	11.90	1.81	13.31	1.84
5.82	0.35	8.36	1.05	10.13	1.94	12.02	1.75	13.37	1.98
5.98	0.35	8.46	1.00	10.19	1.97	12.07	1.70	13.44	2.15
6.11	0.36	8.56	0.96	10.29	2.00	12.12	1.67	13.50	2.34
6.25	0.36	8.74	0.92	10.34	2.03	12.20	1.65	13.53	2.40
6.44	0.36	9.00	0.94	10.44	2.03	12.26	1.65		

Data 7/12/55: Field parallel binary axis; P = 3.3 cm Oct-oil S; Octal N; Hall (r+,b-); current (w+,g-) = 0.0418 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
3.15	0.16	6.57	0.78	9.17	1.73	11.15	2.85	12.60	2.52
3.30	0.19	6.70	0.92	9.25	1.85	11.24	2.84	12.69	2.55
3.59	0.24	6.92	1.10	9.33	1.95	11.30	2.83	12.75	2.58
3.95	0.31	6.99	1.21	9.41	2.10	11.39	2.82	12.83	2.58
4.23	0.31	7.11	1.31	9.49	2.21	11.45	2.80	12.89	2.58
4.37	0.30	7.29	1.36	9.56	2.33	11.54	2.77	12.93	2.57
4.58	0.37	7.40	1.40	9.70	2.47	11.60	2.76	12.97	2.56
4.72	0.48	7.51	1.43	9.77	2.58	11.63	2.75	13.02	2.53
4.87	0.55	7.62	1.48	9.89	2.69	11.66	2.74	13.08	2.52
5.02	0.58	7.73	1.51	9.98	2.75	11.72	2.70	13.12	2.51
5.27	0.63	7.96	1.56	10.10	2.82	11.81	2.64	13.18	2.51
5.40	0.65	8.10	1.56	10.24	2.90	11.87	2.59	13.21	2.53
5.54	0.65	8.26	1.53	10.29	2.92	12.02	2.48	13.25	2.58
5.66	0.63	8.36	1.46	10.38	2.93	12.11	2.41	13.29	2.65
5.79	0.62	8.46	1.42	10.58	2.95	12.22	2.37	13.35	2.75
5.93	0.67	8.60	1.39	10.73	2.95	12.30	2.37	13.49	3.09
6.18	0.71	8.92	1.43	10.85	2.95	12.38	2.38		
6.30	0.71	9.00	1.51	10.89	2.93	12.46	2.42		
6.44	0.71	9.09	1.61	11.09	2.86	12.54	2.46		

Data 7/12/55: Field parallel binary axis; P = 757 mm Hg.; Octal N; Hall (w+,g-); current (b+,r-) = 0.0418 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
3.00	0.05	6.32	0.43	9.01	1.13	11.11	1.95	12.49	1.85
3.29	0.08	6.51	0.49	9.25	1.27	11.29	1.95	12.56	1.85
3.45	0.10	6.69	0.59	9.41	1.41	11.42	1.95	12.62	1.86
3.70	0.13	6.87	0.69	9.60	1.52	11.57	1.95	12.68	1.88
4.01	0.14	7.05	0.76	9.83	1.68	11.65	1.94	12.80	1.90
4.32	0.15	7.37	0.88	10.07	1.79	11.75	1.91	12.92	1.93
4.52	0.20	7.62	0.95	10.21	1.84	11.81	1.90	13.02	1.97
4.72	0.25	7.95	0.98	10.32	1.86	11.90	1.90	13.15	2.05
5.00	0.30	8.11	0.98	10.46	1.90	12.02	1.87	13.27	2.14
5.21	0.33	8.36	0.98	10.59	1.91	12.14	1.85	13.35	2.21
5.53	0.34	8.57	0.98	10.69	1.92	12.17	1.85	13.43	2.29
5.79	0.35	8.70	1.00	10.81	1.94	12.28	1.84	13.51	2.37
6.07	0.38	8.83	1.05	10.93	1.95	12.40	1.85	13.57	2.45

Data 7/12/55: Field parallel binary axis; P = 757 mm Hg.; Octal S; Hall (g+,w-); current (b+,r-) = 0.0418 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
3.00	0.15	6.47	0.88	9.41	2.11	11.20	2.74	12.58	2.51
3.00	0.17	6.69	0.99	9.49	2.19	11.30	2.75	12.66	2.64
3.35	0.21	6.87	1.12	9.56	2.27	11.47	2.72	12.75	2.69
3.51	0.26	7.17	1.29	9.67	2.36	11.62	2.68	12.87	2.74
3.88	0.30	7.51	1.36	9.83	2.52	11.72	2.65	12.99	2.79
4.17	0.30	7.70	1.41	10.01	2.64	11.84	2.63	13.12	2.89
4.37	0.38	8.02	1.43	10.24	2.72	12.02	2.59	13.20	2.96
4.58	0.46	8.45	1.45	10.29	2.75	12.15	2.56	13.30	3.07
4.77	0.52	8.65	1.50	10.36	2.78	12.26	2.56	13.40	3.21
5.01	0.57	8.84	1.63	10.59	2.82	12.30	2.56	13.58	3.46
5.40	0.60	9.02	1.75	10.77	2.82	12.39	2.56		
5.66	0.61	9.16	1.88	10.97	2.81	12.46	2.58		
6.05	0.69	9.25	1.99	11.09	2.89	12.54	2.60		

Data 7/12/55: Field parallel binary axis; P = 451 mm Hg.; Octal N; Hall (w+,g-); current (b+,r-) = 0.0418 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
2.99	0.05	5.95	0.35	9.10	1.14	11.01	1.99	12.47	1.83
3.28	0.06	6.10	0.36	9.37	1.35	11.09	1.99	12.59	1.84
3.55	0.10	6.40	0.40	9.56	1.50	11.13	1.99	12.66	1.85
3.75	0.13	6.69	0.50	9.63	1.57	11.21	1.99	12.74	1.86
4.00	0.14	6.81	0.63	9.70	1.64	11.27	1.99	12.83	1.86
4.05	0.14	7.05	0.75	9.83	1.70	11.33	1.99	12.87	1.89
4.30	0.14	7.23	0.85	9.95	1.78	11.45	1.99	12.94	1.91
4.37	0.15	7.63	0.95	10.13	1.85	11.51	1.98	13.04	1.95
4.47	0.18	7.84	1.00	10.24	1.89	11.60	1.96	13.13	2.01
4.58	0.23	8.06	1.00	10.29	1.90	11.68	1.95	13.23	2.09
4.80	0.26	8.16	1.00	10.44	1.94	11.81	1.91	13.31	2.18
5.00	0.30	8.40	1.00	10.52	1.95	11.96	1.88	13.41	2.29
5.14	0.33	8.48	1.00	10.59	1.96	12.04	1.86	13.52	2.41
5.27	0.34	8.60	0.90	10.70	1.97	12.11	1.85	13.58	2.49
5.40	0.35	8.74	0.90	10.77	1.98	12.20	1.84		
5.50	0.35	8.83	1.01	10.86	1.98	12.28	1.83		
5.79	0.35	8.98	1.06	10.97	1.98	12.30	1.83		

Data 7/12/55: Field parallel binary axis; P = 451 mm Hg.; Octal S; Hall (g+,w-); current (b+,r-) = 0.0418 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
2.85	0.13	5.45	0.61	7.95	1.45	10.34	2.81	12.39	2.55
3.28	0.18	5.55	0.62	8.05	1.45	10.45	2.85	12.48	2.56
3.44	0.21	5.78	0.63	8.10	1.45	10.60	2.87	12.60	2.59
3.58	0.25	5.86	0.66	8.20	1.45	10.77	2.88	12.71	2.63
3.74	0.28	6.12	0.70	8.35	1.45	10.93	2.88	12.80	2.66
3.88	0.30	6.25	0.76	8.45	1.45	10.99	2.85	12.90	2.71
4.02	0.30	6.44	0.83	8.55	1.45	11.22	2.83	13.00	2.76
4.16	0.30	6.57	0.92	8.64	1.50	11.33	2.80	13.15	2.88
4.30	0.31	6.69	1.02	8.83	1.56	11.45	2.75	13.29	3.03
4.44	0.36	6.81	1.14	8.92	1.64	11.60	2.70	13.39	3.16
4.58	0.44	6.95	1.22	9.09	1.74	11.78	2.65	13.52	3.39
4.75	0.50	7.05	1.29	9.25	1.91	11.94	2.60	13.58	3.48
4.90	0.55	7.29	1.35	9.45	2.12	12.02	2.59		
5.07	0.58	7.40	1.38	9.70	2.39	12.14	2.55		
5.16	0.60	7.50	1.40	9.92	2.58	12.24	2.55		
5.30	0.61	7.80	1.45	10.15	2.73	12.28	2.55		

Data 7/12/55: Field parallel binary axis; P = 225 mm Hg.; Octal N; Hall (w+,g-); current (b+,r-) = 0.0418 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
2.84	0.05	5.20	0.35	7.58	0.96	10.37	1.47	12.09	1.85
2.86	0.05	5.40	0.36	7.73	1.00	10.50	2.00	12.16	1.84
3.27	0.07	5.53	0.36	7.85	1.03	10.66	2.02	12.24	1.82
3.31	0.08	5.66	0.36	7.97	1.04	10.81	2.03	12.26	1.82
3.45	0.09	5.79	0.36	8.06	1.04	10.93	2.03	12.34	1.82
3.60	0.11	5.92	0.37	8.16	1.04	11.03	2.04	12.44	1.82
3.74	0.14	6.08	0.38	8.36	1.01	11.17	2.04	12.52	1.83
3.88	0.15	6.20	0.39	8.46	1.00	11.33	2.04	12.58	1.84
4.02	0.15	6.44	0.41	8.65	1.00	11.42	2.03	12.69	1.85
4.23	0.15	6.68	0.51	8.82	1.00	11.52	2.01	12.82	1.88
4.32	0.15	6.78	0.61	8.92	1.03	11.62	2.00	13.00	1.93
4.46	0.18	6.93	0.70	9.01	1.09	11.72	1.96	13.12	1.98
4.70	0.23	7.05	0.77	9.25	1.25	11.84	1.93	13.21	2.05
4.75	0.26	7.17	0.83	9.49	1.46	11.95	1.90	13.29	2.13
4.90	0.30	7.29	0.88	9.71	1.66	11.99	1.89	13.45	2.35
5.12	0.34	7.41	0.93	10.27	1.95	12.05	1.86	13.56	2.52

Data 7/12/55: Field parallel binary axis; P = 757 mm Hg.; Octal S; Hall (g+,w-).; current (b+,r-) = 0.0418 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
2.84	0.14	5.00	0.59	7.85	1.48	10.29	2.86	12.32	2.51
2.85	0.15	5.15	0.61	8.15	1.48	10.49	2.93	12.44	2.52
3.10	0.18	5.39	0.63	8.26	1.47	10.77	2.94	12.54	2.56
3.29	0.20	5.53	0.63	8.47	1.46	10.97	2.93	12.68	2.61
3.45	0.24	5.66	0.63	8.65	1.50	11.18	2.89	12.76	2.65
3.70	0.29	5.85	0.66	8.84	1.59	11.35	2.84	13.02	2.75
3.90	0.31	6.05	0.71	9.09	1.76	11.57	2.75	13.13	2.83
4.20	0.31	6.38	0.79	9.25	1.97	11.60	2.70	13.29	3.00
4.30	0.33	6.57	0.90	9.41	2.15	11.78	2.63	13.40	3.28
4.49	0.41	6.81	1.09	9.56	2.29	11.93	2.59	13.60	3.56
4.72	0.50	7.05	1.28	9.77	2.50	11.99	2.56	13.62	3.59
4.86	0.56	7.51	1.44	10.07	2.78	12.16	2.52		

Data 7/12/55: Field parallel binary axis; P = 90 mm Hg.; Octal N; Hall (w+,g-); current (b+,r-) = 0.0418 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
2.85	0.05	6.24	0.40	8.74	1.00	10.81	2.08	12.36	1.82
3.29	0.08	6.44	0.43	8.83	1.01	10.93	2.08	12.44	1.82
3.74	0.13	6.69	0.54	8.93	1.05	11.13	2.08	12.56	1.85
4.02	0.15	6.81	0.66	9.05	1.11	11.30	2.08	12.77	1.88
4.25	0.15	7.17	0.85	9.17	1.20	11.45	2.08	12.97	1.90
4.70	0.24	7.60	0.99	9.25	1.32	11.57	2.06	13.13	1.96
4.88	0.30	7.73	1.04	9.45	1.43	11.62	2.01	13.33	2.11
5.14	0.35	8.06	1.08	9.70	1.69	11.73	1.97	13.49	2.25
5.35	0.38	8.26	1.07	9.95	1.88	11.87	1.92	13.68	2.68
5.66	0.38	8.36	1.04	10.16	1.98	12.00	1.88		
5.92	0.38	8.50	1.00	10.29	2.03	12.12	1.84		
6.05	0.39	8.61	1.00	10.58	2.06	12.26	1.82		

Data 7/12/55: Field parallel binary axis; P = 90 mm Hg.; Octal S; Hall (g+,w-); current (b+,r-) = 0.0418 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
2.85	0.16	6.59	0.82	9.13	1.85	11.80	2.63	13.33	3.03
3.44	0.24	6.81	1.06	9.25	1.99	11.93	2.56	13.40	3.15
3.70	0.32	6.94	1.23	9.42	2.18	12.06	2.51	13.47	3.29
3.88	0.32	7.17	1.36	9.70	2.44	12.16	2.50	13.55	3.44
4.02	0.32	7.29	1.41	9.95	2.73	12.44	2.51	13.57	3.50
4.18	0.32	7.62	1.43	10.16	2.87	12.56	2.56		
4.50	0.45	7.95	1.50	10.59	3.00	12.66	2.60		
4.72	0.55	8.06	1.50	10.88	3.01	12.76	2.65		
5.00	0.60	8.16	1.50	10.93	2.94	12.88	2.67		
5.33	0.65	8.26	1.50	11.09	2.90	12.95	2.69		
5.55	0.65	8.56	1.47	11.17	2.87	13.03	2.72		
5.80	0.66	8.70	1.50	11.30	2.84	13.11	2.76		
6.05	0.70	8.92	1.65	11.42	2.79	13.20	2.83		
6.38	0.77	9.01	1.74	11.54	2.73	13.26	2.91		

Data 7/12/55: Field parallel binary axis; P = 41 mm Hg.; Octal N; Hall (w+,g-); current (b+,r-) = 0.0418 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
3.14	0.05	7.57	1.00	9.96	1.99	11.55	2.04	12.94	1.87
3.29	0.08	7.84	1.07	10.01	1.92	11.66	2.01	13.01	1.87
3.44	0.08	8.06	1.09	10.07	1.95	11.78	1.96	13.04	1.87
3.59	0.11	8.16	1.08	10.13	1.98	11.90	1.90	13.07	1.87
3.88	0.15	8.26	1.06	10.19	2.00	12.01	1.85	13.10	1.87
4.18	0.14	8.36	1.05	10.27	2.02	12.10	1.82	13.13	1.89
4.32	0.14	8.46	1.02	10.37	2.05	12.16	1.80	13.17	1.90
4.72	0.26	8.56	1.00	10.44	2.06	12.26	1.79	13.20	1.93
4.86	0.31	8.65	0.98	10.59	2.07	12.31	1.79	13.22	1.95
5.19	0.35	8.83	1.00	10.65	2.08	12.34	1.79	13.25	1.96
5.53	0.38	9.03	1.08	10.73	2.09	12.39	1.79	13.28	1.99
5.92	0.37	9.17	1.18	10.83	2.09	12.44	1.80	13.31	2.03
6.20	0.39	9.25	1.30	10.93	2.09	12.48	1.80	13.36	2.10
6.58	0.52	9.41	1.43	11.01	2.09	12.54	1.82	13.43	2.22
6.78	0.65	9.50	1.54	11.13	2.09	12.58	1.83		
6.93	0.74	9.63	1.67	11.16	2.09	12.64	1.84		
7.06	0.84	9.77	1.77	11.27	2.09	12.73	1.85		
7.17	0.89	9.84	1.83	11.33	2.08	12.82	1.86		
7.31	0.94	9.94	1.88	11.43	2.07	12.89	1.87		

Data 7/12/55: Field parallel binary axis; P = 41 mm Hg.; Octal S; Hall (g+,w-); current (b+,r-) = 0.0418 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
2.84	0.15	6.63	0.85	9.25	1.95	10.89	3.00	12.20	2.47
3.14	0.17	6.77	1.01	9.33	2.09	10.93	3.00	12.22	2.46
3.29	0.20	6.90	1.15	9.45	2.21	11.01	2.97	12.24	2.46
3.45	0.25	6.99	1.25	9.56	2.33	11.05	2.96	12.26	2.46
3.74	0.30	7.05	1.31	9.63	2.43	11.13	2.93	12.30	2.46
3.88	0.31	7.15	1.38	9.70	2.48	11.21	2.92	12.34	2.46
4.02	0.31	7.29	1.43	9.73	2.55	11.24	2.91	12.40	2.47
4.23	0.31	7.40	1.44	9.80	2.60	11.27	2.90	12.46	2.50
4.44	0.36	7.47	1.46	9.85	2.69	11.32	2.88	12.52	2.53
4.58	0.46	7.51	1.46	9.92	2.73	11.36	2.88	12.60	2.56
4.72	0.53	7.62	1.49	9.95	2.78	11.42	2.85	12.66	2.59
4.86	0.58	7.73	1.50	10.07	2.82	11.45	2.78	12.73	2.61
5.14	0.61	7.84	1.51	10.10	2.86	11.48	2.75	12.79	2.63
5.27	0.65	7.95	1.52	10.13	2.89	11.57	2.72	12.86	2.64
5.40	0.65	8.11	1.52	10.21	2.91	11.69	2.67	12.92	2.65
5.53	0.65	8.17	1.51	10.26	2.94	11.78	2.63	12.99	2.68
5.66	0.64	8.26	1.50	10.29	2.95	11.84	2.60	13.04	2.68
5.79	0.64	8.36	1.47	10.34	2.96	11.93	2.57	13.09	2.69
5.92	0.66	8.46	1.46	10.40	2.98	11.98	2.55	13.20	2.77
6.05	0.71	8.65	1.46	10.49	3.00	12.04	2.54	13.27	2.86
6.15	0.73	8.67	1.48	10.54	3.00	12.08	2.50	13.39	3.06
6.31	0.75	8.83	1.55	10.79	3.00	12.12	2.49	13.46	3.20
6.44	0.77	9.01	1.71	10.85	3.00	12.18	2.47	13.50	3.27

Data 7/12/55: Field parallel binary axis; P = 20 cm Oct-oil S; Octal N; Hall (w+,g-); current (b+,r-) = 0.0418

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
2.77	0.05	6.85	0.63	9.09	1.11	10.89	2.11	12.56	1.85
3.29	0.08	6.95	0.82	9.17	1.20	10.97	2.11	12.62	1.86
3.62	0.13	7.07	0.87	9.25	1.30	11.13	2.13	12.68	1.88
4.02	0.15	7.23	0.91	9.33	1.40	11.30	2.15	12.73	1.85
4.35	0.15	7.30	0.96	9.41	1.48	11.33	2.15	12.78	1.89
4.57	0.22	7.47	1.01	9.49	1.57	11.52	2.13	12.91	1.88
4.72	0.28	7.73	1.10	9.60	1.69	11.72	2.05	12.96	1.87
4.86	0.32	7.84	1.13	9.70	1.77	11.81	2.00	13.02	1.86
5.00	0.36	7.95	1.15	9.77	1.82	11.90	1.94	13.10	1.86
5.14	0.38	8.06	1.15	9.83	1.88	11.90	1.89	13.16	1.86
5.27	0.40	8.17	1.11	9.95	1.93	12.04	1.85	13.20	1.88
5.40	0.40	8.27	1.08	10.02	1.99	12.12	1.82	13.28	1.96
5.55	0.39	8.36	1.05	10.10	2.02	12.16	1.80	13.36	2.07
5.78	0.38	8.51	1.01	10.16	2.05	12.22	1.80	13.42	2.20
5.91	0.38	8.61	0.99	10.29	2.08	12.30	1.80	13.49	2.35
6.05	0.40	8.73	0.98	10.40	2.10	12.35	1.80	13.52	2.40
6.18	0.40	8.83	0.99	10.56	2.11	12.40	1.80		
6.38	0.41	8.92	1.00	10.70	2.11	12.46	1.83		
6.57	0.50	9.00	1.05	10.77	2.11	12.50	1.83		

Data 7/12/55: Field parallel binary axis; P = 20 cm Oct-oil S; Octal S; Hall (g+,w-); current (b+,r-) = 0.0418 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
3.14	0.20	6.20	0.75	8.57	1.46	10.29	2.99	12.10	2.50
3.44	0.23	6.37	0.76	8.66	1.46	10.34	3.01	12.17	2.48
3.60	0.28	6.51	0.80	8.83	1.49	10.39	3.02	12.24	2.48
3.75	0.31	6.69	0.90	8.87	1.53	10.46	3.03	12.32	2.48
3.89	0.33	6.81	1.06	8.95	1.60	10.54	3.04	12.38	2.50
4.16	0.33	6.93	1.21	9.05	1.69	10.64	3.05	12.47	2.54
4.28	0.32	7.05	1.31	9.13	1.80	10.70	3.05	12.52	2.56
4.44	0.32	7.17	1.38	9.25	1.89	10.77	3.05	12.62	2.61
4.58	0.40	7.29	1.43	9.33	2.02	10.85	3.04	12.73	2.65
4.72	0.50	7.40	1.46	9.45	2.24	10.95	3.00	12.82	2.66
4.86	0.56	7.51	1.50	9.56	2.40	11.21	2.90	12.91	2.66
5.00	0.60	7.62	1.52	9.63	2.50	11.27	2.90	12.99	2.66
5.14	0.65	7.73	1.56	9.70	2.59	11.31	2.88	13.07	2.66
5.38	0.67	7.84	1.58	9.80	2.66	11.34	2.86	13.15	2.70
5.47	0.67	7.95	1.59	9.86	2.73	11.45	2.84	13.23	2.78
5.65	0.66	8.06	1.59	9.92	2.77	11.51	2.81	13.31	2.90
5.72	0.65	8.16	2.58	9.95	2.81	11.60	2.78	13.39	3.06
5.92	0.66	8.27	1.55	10.04	2.86	11.78	2.69	13.47	3.26
6.05	0.71	8.36	1.50	10.10	2.91	11.93	2.60	13.57	3.53
6.16	0.75	8.46	1.47	10.19	2.95	12.04	2.54		

Data 7/12/55: Field parallel binary axis; P = 2.8 cm Oct-oil S; Octal N; Hall (w+,g-); current (b+,r-) = 0.0418 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
3.12	0.06	5.66	0.41	7.84	1.13	10.77	2.18	12.34	1.78
3.45	0.10	5.80	0.39	8.16	1.15	10.97	2.15	12.40	1.80
3.60	0.14	5.93	0.40	8.26	1.10	11.15	2.17	12.50	1.84
4.02	0.18	6.06	0.41	8.46	1.03	11.13	2.18	12.56	1.87
4.30	0.15	6.20	0.42	8.65	0.98	11.31	2.18	12.71	1.91
4.44	0.15	6.33	0.41	8.92	1.00	11.48	2.16	12.93	1.87
4.72	0.24	6.45	0.44	9.05	1.09	11.61	2.14	13.10	1.74
4.86	0.30	6.63	0.52	9.33	1.40	11.74	2.08	13.28	1.92
5.00	0.33	6.81	0.64	9.49	1.60	11.87	1.98	13.33	2.00
5.14	0.36	6.93	0.75	9.79	1.88	11.99	1.89	13.39	2.12
5.27	0.40	7.05	0.85	10.13	2.08	12.10	1.81	13.43	2.25
5.40	0.42	7.29	0.95	10.29	2.13	12.19	1.77	13.56	2.50
5.53	0.43	7.51	1.01	10.56	2.15	12.20	1.78	13.57	2.55

Data 7/12/55: Field parallel binary axis; P = 2.8 cm Oct-oil S; Octal S; Hall (g+,w-); current (b+,r-) = 0.0418 amp.

Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.	Field k.-g.	Hall m.v.
3.14	0.19	5.92	0.66	7.95	1.60	10.13	2.94	12.48	2.53
3.44	0.22	6.11	0.74	8.16	1.61	10.31	3.07	12.71	2.65
3.76	0.31	6.44	0.75	8.36	1.53	10.61	3.08	12.92	2.65
4.02	0.34	6.63	0.82	8.79	1.48	10.85	3.09	13.07	2.60
4.44	0.33	6.81	0.99	8.95	1.58	11.09	3.01	13.32	2.86
4.51	0.44	6.93	1.08	9.09	1.73	11.24	2.98	13.49	3.33
4.86	0.54	7.11	1.34	9.25	1.90	11.26	2.91	13.62	3.76
5.07	0.63	7.29	1.42	9.33	2.05	11.54	2.80		
5.32	0.67	7.44	1.47	9.63	2.49	11.97	2.56		
5.67	0.66	7.62	1.53	9.89	2.78	12.23	2.40		

APPENDIX IV

The Hall voltages, V, appearing in the following tables are the averages of the experimental values, V(H)/2 - V(-H). These numbers were taken directly from the graphs of the experimental data. Each has been corrected by the addition of 0.07 milli-volts (see Appendix I).

Calculated data: Field parallel trigonal axis; Hall probes perpendicular to trigonal and binary axes. $R = (Vt)/(IH) \times 10^6$ ohm-cm./gauss; V is corrected Hall voltage in millivolts; T = 0.49 cm.; I = 0.0165 amp.

Temperature:	1.3°K		1.82°K		2.21°K		2.58°K		3.15°K		3.71°K		4.2°K	
$(1/H) \times 10^3$	V	R	V	R	V	R	V	R	V	R	V	R	V	R
0.333	0.13	1.29	0.13	1.29	0.12	1.19	0.13	1.29	0.13	1.29	0.13	1.29	0.12	1.19
0.323	0.13	1.28	0.14	1.34	0.13	1.25	0.14	1.34	0.13	1.25	0.14	1.34	0.13	1.25
0.313	0.14	1.30	0.15	1.39	0.14	1.30	0.15	1.39	0.14	1.30	0.15	1.39	0.13	1.21
0.303	0.15	1.35	0.16	1.44	o.15	1.35	0.15	1.35	0.15	1.35	0.15	1.35	0.14	1.26
0.294	0.16	1.40	0.17	1.49	0.15	1.31	0.16	1.40	0.15	1.31	0.16	1.40	0.15	1.31
0.286	0.17	1.44	0.17	1.44	0.16	1.36	0.17	1.44	0.16	1.36	0.17	1.44	0.15	1.27
0.278	0.18	1.49	0.18	1.49	0.17	1.40	0.18	1.49	0.17	1.40	0.18	1.49	0.16	1.32
0.270	0.19	1.52	0.19	1.52	0.18	1.44	0.19	1.52	0.18	1.44	0.19	1.52	0.17	1.36
0.263	0.20	1.56	0.21	1.64	0.19	1.48	0.20	1.56	0.19	1.48	0.20	1.56	0.18	1.41
0.256	0.21	1.60	0.22	1.67	0.20	1.52	0.21	1.60	0.21	1.60	0.21	1.60	0.19	1.45
0.250	0.22	1.63	0.23	1.71	0.22	1.63	0.22	1.63	0.22	1.63	0.22	1.63	0.20	1.48
0.244	0.23	1.67	0.24	1.74	0.23	1.67	0.23	1.67	0.23	1.67	0.23	1.67	0.21	1.52
0.238	0.25	1.77	0.26	1.80	0.25	1.77	0.25	1.77	0.25	1.77	0.24	1.70	0.22	1.56
0.233	0.26	1.80	0.26	1.81	0.27	1.86	0.26	1.80	0.26	1.80	0.25	1.73	0.23	1.59
0.227	0.28	1.89	0.28	1.89	0.28	1.89	0.28	1.89	0.28	1.89	0.27	1.82	0.25	1.69

Temperature: (1/H)x10^3	1.3°K V	1.3°K R	1.82°K V	1.82°K R	2.21°K V	2.21°K R	2.58°K V	2.58°K R	3.15°K V	3.15°K R	3.71°K V	3.71°K R	4.2°K V	4.2°K R
0.222	0.29	1.91	0.30	1.95	0.29	1.91	0.29	1.91	0.29	1.91	0.28	1.85	0.26	1.72
0.217	0.30	1.94	0.32	2.05	0.31	2.00	0.31	2.00	0.31	2.00	0.29	1.87	0.27	1.74
0.213	0.31	1.96	0.33	2.06	0.32	2.02	0.33	2.08	0.32	2.02	0.31	1.96	0.29	1.83
0.208	0.33	2.04	0.35	2.16	0.34	2.10	0.34	2.10	0.33	2.04	0.32	1.98	0.31	1.92
0.204	0.34	2.06	0.37	2.23	0.35	2.12	0.36	2.18	0.35	2.12	0.34	2.06	0.32	1.94
0.200	0.36	2.14	0.39	2.31	0.37	2.20	0.38	2.26	0.36	2.14	0.35	2.08	0.34	2.02
0.196	0.37	2.16	0.41	2.41	0.38	2.21	0.39	2.27	0.38	2.21	0.38	2.21	0.35	2.04
0.192	0.39	2.23	0.43	2.48	0.40	2.28	0.41	2.34	0.39	2.23	0.39	2.23	0.37	2.11
0.189	0.41	2.30	0.45	2.54	0.42	2.35	0.43	2.41	0.41	2.30	0.41	2.30	0.39	2.18
0.185	0.44	2.92	0.47	2.58	0.44	2.42	0.45	2.48	0.42	2.31	0.43	2.36	0.41	2.26
0.182	0.46	2.48	0.48	2.62	0.47	2.54	0.47	2.54	0.44	2.48	0.45	2.43	0.42	2.27
0.179	0.48	2.54	0.50	2.63	0.49	2.60	0.48	2.54	0.47	2.49	0.48	2.54	0.44	2.33
0.175	0.50	2.60	0.52	2.73	0.50	2.60	0.51	2.66	0.49	2.55	0.50	2.60	0.46	2.40
0.172	0.54	2.76	0.56	2.89	0.53	2.71	0.53	2.71	0.51	2.61	0.52	2.66	0.48	2.46
0.170	0.58	2.92	0.59	2.97	0.55	2.77	0.56	2.82	0.54	2.72	0.54	2.72	0.50	2.52
0.167	0.60	2.97	0.59	2.92	0.57	2.82	0.59	2.92	0.57	2.82	0.55	2.72	0.52	2.57
0.164	0.61	2.97	0.60	2.92	0.62	3.02	0.61	2.97	0.59	2.87	0.58	2.82	0.54	2.63

Temperature:	1.3°K		1.82°K		2.21°K		2.58°K		3.15°K		3.71°K		4.2°K	
$(1/H) \times 10^3$	V	R	V	R	V	R	V	R	V	R	V	R	V	R
0.161	0.62	2.97	0.64	3.06	0.66	3.16	0.64	3.06	0.62	2.97	0.60	2.87	0.57	2.73
0.159	0.68	3.20	0.69	3.25	0.69	3.25	0.69	3.25	0.65	3.06	0.63	2.97	0.59	2.78
0.156	0.73	3.39	0.71	3.29	0.71	3.29	0.70	3.29	0.68	3.16	0.65	3.02	0.61	2.83
0.154	0.76	3.47	0.74	3.38	0.73	3.34	0.71	3.24	0.70	3.20	0.67	3.06	0.63	2.88
0.152	0.76	3.42	0.74	3.33	0.74	3.33	0.72	3.24	0.72	3.24	0.69	3.10	0.66	2.97
0.149	0.74	3.28	0.74	3.28	0.75	3.32	0.75	3.32	0.73	3.24	0.71	3.14	0.68	3.01
0.147	0.73	3.19	0.77	3.36	0.79	3.45	0.78	3.41	0.76	3.32	0.74	3.23	0.71	3.10
0.145	0.79	3.40	0.83	3.57	0.85	3.66	0.84	3.62	0.81	3.49	0.77	3.31	0.75	3.23
0.143	0.91	3.84	0.90	3.82	0.91	3.84	0.89	3.78	0.85	3.61	0.81	3.39	0.77	3.27
0.141	0.97	4.06	0.95	3.98	0.94	3.94	0.91	3.81	0.88	3.68	0.84	3.52	0.80	3.35
0.139	1.00	4.12	0.97	4.00	0.95	3.92	0.93	3.84	0.90	3.71	0.87	3.59	0.82	3.38
0.137	0.99	4.03	0.98	3.99	0.95	3.85	0.94	3.82	0.91	3.70	0.90	3.66	0.85	3.46
0.135	0.96	3.85	0.97	3.89	0.96	3.85	0.95	3.82	0.93	3.74	0.92	3.69	0.87	3.57
0.133	0.94	3.72	0.96	3.80	0.97	3.84	0.97	3.84	0.97	3.84	0.95	3.76	0.92	3.64
0.132	0.95	3.71	0.97	3.79	1.00	3.91	1.01	3.95	0.99	3.87	0.97	3.79	0.95	3.71
0.130	1.10	4.25	1.03	3.98	1.04	4.01	1.07	4.13	1.04	4.01	1.02	3.94	0.97	3.74
0.128	1.24	4.72	1.13	4.30	1.09	4.15	1.14	4.35	1.09	4.15	1.07	4.07	1.01	3.85

Temperature:	1.3°K		1.82°K		2.21°K		2.58°K		3.15°K		3.71°K		4.2°K	
$(1/H)\times10^3$	V	R	V	R	V	R	V	R	V	R	V	R	V	R
0.127	1.30	4.89	1.13	4.25	1.20	4.51	1.19	4.47	1.15	4.32	1.12	4.21	1.06	3.98
0.125	1.34	4.97	1.28	4.75	1.25	4.64	1.23	4.56	1.18	4.38	1.16	4.30	1.09	4.05
0.123	1.35	4.95	1.31	4.80	1.27	4.66	1.24	4.55	1.21	4.43	1.18	4.33	1.11	4.07
0.122	1.33	4.81	1.31	4.75	1.28	4.64	1.25	4.53	1.23	4.45	1.19	4.31	1.14	4.13
0.121	1.30	4.65	1.29	4.61	1.28	4.58	1.25	4.47	1.23	4.40	1.21	4.33	1.17	4.19
0.119	1.25	4.41	1.26	4.45	1.27	4.50	1.25	4.41	1.24	4.38	1.23	4.35	1.19	4.20
0.118	1.21	4.20	1.24	4.33	1.27	4.43	1.26	4.40	1.26	4.40	1.27	4.44	1.21	4.22
0.116	1.22	4.21	1.24	4.28	1.28	4.42	1.31	4.52	1.29	4.45	1.31	4.52	1.24	4.28
0.115	1.31	4.45	1.29	4.41	1.34	4.57	1.39	4.75	1.34	4.57	1.34	4.57	1.27	4.34
0.114	1.42	4.79	1.41	4.75	1.43	4.82	1.47	4.96	1.41	4.75	1.40	4.72	1.32	4.45
0.112	1.58	5.27	1.54	5.14	1.53	5.11	1.54	5.14	1.49	4.98	1.47	4.90	1.37	4.58
0.111	1.74	5.75	1.65	5.45	1.61	5.31	1.61	5.31	1.55	5.12	1.53	5.05	1.42	4.69
0.110	1.80	5.87	1.73	5.65	1.70	5.55	1.67	5.45	1.61	5.25	1.57	5.12	1.47	4.80
0.109	1.83	5.91	1.78	5.75	1.74	5.62	1.71	5.52	1.64	5.30	1.59	5.14	1.51	4.89
0.108	1.84	5.88	1.80	5.75	1.77	5.65	1.72	5.50	1.66	5.30	1.61	5.15	1.54	4.91
0.106	1.82	5.75	1.79	5.65	1.77	5.60	1.73	5.47	1.67	5.28	1.63	5.15	1.57	4.96
0.105	1.79	5.60	1.76	5.50	1.76	5.50	1.72	5.38	1.67	5.21	1.63	5.09	1.58	4.94

Temperature:	1.3°K		1.82°K		2.21°K		2.58°K		3.15°K		3.71°K		4.2°K	
$(1/H) \times 10^3$	V	R	V	R	V	R	V	R	V	R	V	R	V	R
0.104	1.72	5.33	1.73	5.35	1.74	5.39	1.71	5.30	1.67	5.16	1.65	5.11	1.59	4.92
0.103	1.63	5.00	1.68	5.15	1.70	5.20	1.69	5.18	1.67	5.11	1.67	5.11	1.61	4.94
0.102	1.59	4.81	1.64	4.96	1.68	5.10	1.69	5.11	1.68	5.09	1.69	5.11	1.65	5.00
0.101	1.59	4.78	1.63	4.90	1.68	5.05	1.71	5.14	1.73	5.20	1.73	5.20	1.68	5.05
0.100	1.65	4.90	1.70	5.05	1.71	5.08	1.79	5.31	1.78	5.29	1.78	5.29	1.72	5.10
0.099	1.79	5.26	1.82	5.35	1.82	5.35	1.91	5.61	1.85	5.45	1.85	5.45	1.77	5.21
0.098	2.02	5.89	2.02	5.89	1.95	5.69	2.03	5.91	1.94	5.65	1.93	5.62	1.83	5.24
0.097	2.27	6.55	2.21	6.36	2.11	6.09	2.14	6.16	2.05	5.91	2.03	5.85	1.91	5.50
0.096	2.44	6.96	2.35	6.70	2.25	6.42	2.25	6.42	2.16	6.16	2.12	6.05	1.98	5.65
0.095	2.53	7.15	2.45	6.94	2.36	6.67	2.33	6.59	2.24	6.34	2.18	6.16	2.05	5.80
0.094	2.57	7.20	2.51	7.04	2.44	6.84	2.40	6.72	2.30	6.45	2.23	6.25	2.12	5.94
0.093	2.59	7.11	2.55	7.01	2.50	6.86	2.45	6.74	2.36	6.49	2.29	6.30	2.21	6.08
0.092	2.58	7.03	2.53	6.89	2.50	6.81	2.45	6.67	2.37	6.45	2.31	6.29	2.23	6.08
0.091	2.54	6.85	2.51	6.76	2.49	6.53	2.43	6.55	2.36	6.36	2.31	6.23	2.25	6.06
0.090	2.47	6.60	2.45	6.55	2.45	6.55	2.40	6.41	2.35	6.29	2.32	6.20	2.25	6.01
0.089	2.38	6.31	2.39	6.34	2.46	6.51	2.36	6.25	2.33	6.18	2.32	6.15	2.26	5.99
0.088	2.16	5.62	2.22	5.79	2.28	5.94	2.29	5.96	2.31	6.01	2.32	6.04	2.32	6.04

Temperature:	1.3°K		1.82°K		2.21°K		2.58°K		3.15°K		3.71°K		4.2°K	
$(1/H)\times10^3$	V	R	V	R	V	R	V	R	V	R	V	R	V	R
0.087	2.12	5.48	2.18	5.64	2.26	5.83	2.30	5.94	2.31	5.96	2.35	6.06	2.35	6.06
0.086	2.13	5.45	2.19	5.60	2.27	5.81	2.32	5.94	2.35	6.01	2.39	6.11	2.39	6.11
0.085	2.34	5.89	2.31	5.81	2.42	6.08	2.46	6.20	2.47	6.21	2.50	6.30	2.49	6.26
0.084	2.54	6.34	2.43	6.31	2.57	6.40	2.56	6.39	2.57	6.41	2.57	6.41	2.56	6.39
0.083	2.80	6.91	2.64	6.52	2.71	6.70	2.69	6.65	2.68	6.62	2.66	6.58	2.65	6.55
0.082	3.36	8.18	3.25	7.91	3.11	6.56	3.07	7.46	3.01	7.32	2.91	7.08	2.85	6.94
0.081	3.50	8.45	3.39	8.19	3.25	7.85	3.25	7.85	3.15	7.60	3.03	7.31	2.93	7.07
0.080	3.65	8.66	3.57	8.48	3.47	8.24	3.46	8.21	3.35	7.93	3.22	7.65	3.08	7.31
0.079	3.69	8.69	3.62	8.52	3.55	8.36	3.52	8.29	3.39	7.99	3.27	7.70	3.15	7.41
0.078	3.71	8.60	3.66	8.49	3.63	8.41	3.57	8.28	3.45	8.00	3.35	7.76	3.22	7.46
0.077	3.68	8.40	3.64	8.31	3.62	8.26	3.53	8.06	3.44	7.85	3.37	7.70	3.25	7.42
0.076	3.61	8.19	3.59	8.14	3.60	8.00	3.48	7.80	3.41	7.72	3.36	7.61	3.26	7.39
0.075	3.39	7.56	3.42	7.63	3.49	7.80	3.35	7.48	3.33	7.44	3.33	7.44	3.26	7.27
0.074	3.25	7.20	3.31	7.34	3.38	7.49	3.30	7.31	3.29	7.29	3.31	7.38	3.26	7.22

Calculated data: Field parallel trigonal axis; Hall probes parallel to binary axis.
$R = (Vt)(IH) \times 10^6$ ohm-cm./gauss; V is corrected Hall voltage in milli-volts; t = 0.49 cm; I = 0.0165 amp.

Temperature	1.3°K		1.82°K		2.21°K		2.58°K		3.15°K		3.71°K		4.2°K	
$(I/H)\times 10^3$	V	R	V	R	V	R	V	R	V	R	V	R	V	R
0.333	0.13	1.29	0.13	1.29	0.13	1.29	0.12	1.19	0.11	1.09	0.12	1.19	0.13	1.29
0.323	0.14	1.34	0.14	1.34	0.14	1.34	0.13	1.25	0.13	1.25	0.13	1.25	0.14	1.34
0.313	0.15	1.39	0.15	1.39	0.15	1.39	0.14	1.30	0.13	1.21	0.14	1.30	0.14	1.30
0.303	0.16	1.44	0.15	1.35	0.15	1.35	0.15	1.35	0.14	1.26	0.14	1.26	0.15	1.35
0.294	0.17	1.48	0.16	1.40	0.16	1.40	0.15	1.31	0.15	1.31	0.15	1.31	0.15	1.31
0.286	0.18	1.53	0.17	1.44	0.17	1.44	0.16	1.36	0.16	1.36	0.16	1.36	0.16	1.36
0.278	0.19	1.57	0.18	1.48	0.18	1.48	0.17	1.40	0.18	1.48	0.17	1.40	0.16	1.32
0.270	0.20	1.60	0.19	1.52	0.19	1.52	0.19	1.52	0.19	1.52	0.18	1.44	0.17	1.36
0.263	0.21	1.64	0.20	1.56	0.20	1.56	0.20	1.56	0.20	1.56	0.19	1.48	0.18	1.41
0.256	0.22	1.67	0.21	1.60	0.21	1.60	0.21	1.60	0.21	1.60	0.19	1.45	0.19	1.45
0.250	0.23	1.71	0.22	1.63	0.22	1.63	0.22	1.63	0.23	1.71	0.21	1.56	0.20	1.48
0.244	0.24	1.74	0.23	1.67	0.23	1.67	0.23	1.67	0.24	1.74	0.22	1.59	0.21	1.52
0.238	0.25	1.77	0.24	1.70	0.25	1.77	0.24	1.70	0.25	1.77	0.23	1.63	0.22	1.56
0.233	0.26	1.80	0.26	1.80	0.26	1.80	0.25	1.73	0.27	1.73	0.24	1.66	0.23	1.59
0.227	0.27	1.82	0.27	1.82	0.28	1.89	0.27	1.82	0.27	1.82	0.25	1.69	0.25	1.69

Temperature $(1/H) \times 10^3$	1.3°K V	1.3°K R	1.82°K V	1.82°K R	2.21°K V	2.21°K R	2.58°K V	2.58°K R	3.15°K V	3.15°K R	3.71°K V	3.71°K R	4.2°K V	4.2°K R
0.222	0.29	1.91	0.28	1.85	0.29	1.91	0.28	1.85	0.29	1.91	0.26	1.72	0.26	1.72
0.217	0.31	2.00	0.29	1.87	0.31	2.00	0.29	1.87	0.30	1.94	0.28	1.81	0.27	1.74
0.213	0.33	2.08	0.31	1.96	0.33	2.08	0.31	1.96	0.31	1.96	0.29	1.83	0.29	1.83
0.208	0.35	2.16	0.32	1.98	0.34	2.10	0.33	2.04	0.33	2.04	0.31	1.92	0.30	1.85
0.204	0.36	2.18	0.34	2.06	0.36	2.18	0.35	2.12	0.34	2.06	0.33	2.00	0.32	1.94
0.200	0.39	2.32	0.36	2.14	0.37	2.20	0.36	2.14	0.35	2.08	0.34	2.02	0.33	1.96
0.196	0.41	2.39	0.38	2.21	0.40	2.33	0.38	2.23	0.37	2.16	0.36	2.10	0.35	2.04
0.192	0.43	2.46	0.40	2.28	0.41	2.34	0.40	2.28	0.39	2.22	0.38	2.17	0.36	2.06
0.189	0.45	2.52	0.42	2.35	0.43	2.47	0.42	2.35	0.41	2.30	0.39	2.18	0.38	2.13
0.185	0.47	2.58	0.44	2.42	0.45	2.47	0.44	2.42	0.43	2.36	0.41	2.25	0.40	2.20
0.182	0.48	2.59	0.46	2.48	0.47	2.54	0.46	2.48	0.45	2.43	0.43	2.32	0.42	2.27
0.179	0.50	2.65	0.49	2.60	0.50	2.65	0.48	2.54	0.47	2.49	0.45	2.38	0.44	2.33
0.175	0.51	2.66	0.52	2.71	0.52	2.71	0.50	2.60	0.49	2.55	0.47	2.45	0.46	2.40
0.172	0.54	2.76	0.55	2.82	0.55	2.82	0.52	2.66	0.51	2.61	0.49	2.51	0.48	2.46
0.170	0.60	3.02	0.57	2.87	0.57	2.87	0.55	2.77	0.54	2.72	0.51	2.56	0.49	2.47
0.167	0.61	3.02	0.60	2.97	0.59	2.92	0.57	2.82	0.56	2.77	0.53	2.62	0.51	2.52
0.164	0.59	2.87	0.61	2.97	0.61	2.97	0.59	2.87	0.58	2.77	0.55	2.68	0.54	2.63

Temperature	1.3°K		1.82°K		2.21°K		2.58°K		3.15°K		3.71°K		4.2°K	
$(1/H)\mathrm{x}10^3$	V	R	V	R	V	R	V	R	V	R	V	R	V	R
0.161	0.60	2.87	0.62	2.97	0.63	3.07	0.62	2.97	0.61	2.92	0.57	2.73	0.56	2.68
0.159	0.65	3.06	0.63	2.97	0.67	3.16	0.65	3.06	0.63	2.97	0.59	2.78	0.58	2.73
0.166	0.71	3.29	0.67	3.11	0.70	3.25	0.67	3.11	0.66	3.06	0.61	2.83	0.60	2.78
0.154	0.77	3.52	0.71	3.24	0.73	3.34	0.70	3.20	0.69	3.15	0.64	2.92	0.63	2.88
0.152	0.78	3.51	0.74	3.33	0.74	3.28	0.73	3.28	0.71	3.19	0.66	2.97	0.65	2.92
0.149	0.76	3.37	0.74	3.28	0.73	3.24	0.75	3.32	0.74	3.28	0.69	3.06	0.67	2.97
0.147	0.75	3.28	0.74	3.23	0.75	3.28	0.78	3.40	0.77	3.36	0.71	3.10	0.69	3.01
0.145	0.81	3.49	0.77	3.31	0.81	3.49	0.81	3.49	0.80	3.49	0.74	3.18	0.72	3.10
0.143	0.91	3.86	0.82	3.48	0.87	3.69	0.84	3.56	0.83	3.52	0.77	3.26	0.74	3.14
0.141	0.97	4.06	0.90	3.77	0.91	3.81	0.87	3.64	0.86	3.60	0.79	3.30	0.77	3.22
0.139	1.00	4.12	0.95	3.92	0.94	3.88	0.90	3.71	0.89	3.67	0.82	3.38	0.80	3.30
0.137	0.99	4.03	0.96	3.91	0.95	3.87	0.93	3.79	0.92	3.74	0.85	3.46	0.83	3.38
0.135	0.96	3.86	0.95	3.82	0.95	3.82	0.95	3.82	0.95	3.82	0.88	3.53	0.86	3.45
0.133	0.93	3.68	0.94	3.72	0.97	3.84	0.97	3.84	0.97	3.84	0.91	3.60	0.89	3.52
0.132	0.95	3.71	0.95	3.71	0.99	3.87	0.99	3.87	1.01	3.95	0.94	3.68	0.93	3.64

Temperature (1/H)x10^3	1.3^oK		1.82^oK		2.21^oK		2.58^oK		3.15^oK		3.71^oK		4.2^oK	
	V	R	V	R	V	R	V	R	V	R	V	R	V	R
0.130	1.02	3.94	1.00	3.86	1.03	3.98	1.02	3.94	1.04	4.01	0.97	3.74	0.97	3.74
0.128	1.16	4.41	1.10	4.19	1.10	4.19	1.07	4.07	1.09	4.15	1.01	3.84	1.01	3.84
0.127	1.29	4.85	1.22	4.59	1.19	4.47	1.16	4.36	1.14	4.29	1.06	3.98	1.05	3.94
0.125	1.34	4.98	1.28	4.75	1.25	4.65	1.21	4.50	1.18	4.39	1.10	4.09	1.08	4.01
0.123	1.35	4.95	1.30	4.77	1.27	4.66	1.23	4.51	1.21	4.44	1.13	4.15	1.11	4.07
0.122	1.33	4.82	1.29	4.68	1.27	4.60	1.24	4.50	1.22	4.42	1.16	4.20	1.14	4.13
0.121	1.28	4.58	1.27	4.55	1.27	4.55	1.25	4.48	1.23	4.40	1.19	4.26	1.16	4.15
0.119	1.24	4.38	1.24	4.38	1.26	4.45	1.26	4.45	1.25	4.42	1.21	4.28	1.19	4.21
0.118	1.20	4.20	1.23	4.30	1.26	4.40	1.27	4.44	1.28	4.47	1.24	4.33	1.22	4.26
0.116	1.21	4.18	1.24	4.28	1.28	4.42	1.28	4.42	1.32	4.56	1.27	4.39	1.25	4.31
0.115	1.35	4.60	1.30	4.43	1.34	4.57	1.34	4.57	1.37	4.67	1.30	4.44	1.29	4.40
0.114	1.50	5.06	1.42	4.80	1.44	4.86	1.45	4.90	1.43	4.84	1.35	4.55	1.32	4.45
0.112	1.63	5.44	1.56	5.20	1.55	5.17	1.53	5.10	1.49	4.97	1.39	4.64	1.36	4.54
0.111	1.73	5.70	1.66	5.48	1.65	5.45	1.60	5.28	1.55	5.11	1.46	4.81	1.41	4.65
0.110	1.81	5.91	1.74	5.68	1.71	5.59	1.65	5.39	1.60	5.22	1.52	4.96	1.46	4.77
0.109	1.84	5.95	1.78	5.75	1.73	5.59	1.69	5.46	1.64	5.30	1.56	5.04	1.50	4.85
0.108	1.85	5.91	1.79	5.72	1.75	5.60	1.71	5.46	1.66	5.30	1.59	5.08	1.53	4.89

Temperature $(1/H)\times10^3$	1.3°K V	1.3°K R	1.82°K V	1.82°K R	2.21°K V	2.21°K R	2.58°K V	2.58°K R	3.15°K V	3.15°K R	3.71°K V	3.71°K R	4.2°K V	4.2°K R
0.106	1.83	5.79	1.79	5.66	1.74	5.50	1.71	5.40	1.67	5.28	1.62	5.12	1.56	4.93
0.105	1.78	5.56	1.75	5.47	1.73	5.41	1.71	5.35	1.68	5.25	1.63	5.10	1.58	4.94
0.104	1.70	5.26	1.70	5.26	1.71	5.30	1.70	5.26	1.68	5.20	1.64	5.07	1.59	4.92
0.103	1.62	4.96	1.64	5.02	1.69	5.18	1.69	5.18	1.69	5.18	1.65	5.05	1.62	4.96
0.102	1.58	4.79	1.62	5.91	1.69	5.12	1.69	5.12	1.70	5.15	1.69	5.12	1.65	5.00
0.101	1.59	4.77	1.63	4.89	1.70	5.10	1.71	5.13	1.73	5.20	1.71	5.13	1.70	5.10
0.100	1.69	5.02	1.70	5.05	1.75	5.20	1.77	5.25	1.79	5.31	1.77	5.25	1.74	5.16
0.099	1.86	5.47	1.84	5.41	1.85	5.44	1.85	5.44	1.86	5.47	1.83	5.38	1.79	5.26
0.098	2.09	6.09	2.02	5.88	1.98	5.76	1.98	5.76	1.96	5.70	1.90	5.53	1.85	5.39
0.097	2.35	6.78	2.20	6.35	2.14	6.17	2.11	6.09	2.06	5.95	1.99	5.75	1.91	5.51
0.096	2.52	7.20	2.34	6.79	2.28	6.51	2.24	6.40	2.16	6.17	2.06	5.89	1.99	5.69
0.095	2.57	7.27	2.46	6.95	2.38	6.73	2.32	6.56	2.25	6.37	2.19	6.05	2.05	5.80
0.094	2.61	7.32	2.52	7.06	2.45	6.87	2.38	6.67	2.31	6.48	2.22	6.22	2.11	5.92
0.093	2.61	7.18	2.55	7.02	2.49	6.85	2.44	6.71	2.35	6.47	2.29	6.30	2.18	6.00
0.092	2.58	7.03	2.53	6.90	2.48	6.75	2.43	6.62	2.37	6.46	2.31	6.30	2.21	6.02
0.091	2.53	6.83	2.47	6.67	2.45	6.62	2.42	6.53	2.37	6.40	2.31	6.24	2.22	6.00
0.090	2.43	6.50	2.41	6.45	2.42	6.47	2.39	6.40	2.36	6.31	2.31	6.18	2.24	6.00

Temperature (1/H)x10^3	1.3°K		1.82°K		2.21°K		2.58°K		3.15°K		3.71°K		4.2°K	
	V	R	V	R	V	R	V	R	V	R	V	R	V	R
0.089	2.32	6.15	2.34	6.20	2.37	6.28	2.36	6.25	2.35	6.23	2.32	6.15	2.25	5.97
0.085	2.12	5.52	2.17	5.66	2.29	5.97	2.30	6.00	2.33	6.07	2.36	6.15	2.29	5.97
0.087	2.10	5.42	2.15	5.55	2.28	5.89	2.29	5.92	2.35	6.07	2.39	6.18	2.31	5.97
0.086	2.11	5.43	2.16	5.53	2.29	5.97	2.31	5.92	2.37	6.07	2.42	6.20	2.35	6.02
0.085	2.33	5.87	2.39	6.02	2.43	6.12	2.46	6.20	2.52	6.35	2.55	6.42	2.44	6.14
0.084	2.56	6.39	2.56	6.39	2.55	6.36	2.58	6.44	2.63	6.56	2.62	6.54	2.50	6.24
0.083	2.82	6.98	2.75	6.81	2.74	6.78	2.75	6.81	2.77	6.86	2.7o	6.71	2.59	6.41
0.082	3.35	8.16	3.19	7.76	3.15	7.66	3.13	7.62	3.06	7.45	2.93	7.13	2.78	6.76
0.081	3.51	8.48	3.39	8.19	3.34	8.06	3.27	7.90	3.17	7.66	3.04	7.35	2.88	6.95
0.080	3.67	8.72	3.60	8.55	3.54	8.41	3.46	8.22	3.33	7.91	3.22	7.65	3.06	7.27
0.079	3.71	8.74	3.63	8.56	3.59	8.47	3.51	8.27	3.38	7.96	3.27	7.71	3.12	7.35
0.078	3.74	8.68	3.67	8.52	3.62	8.40	3.54	8.21	3.43	7.96	3.34	7.75	3.20	7.45
0.077	3.71	8.47	3.63	8.29	3.60	8.22	3.52	8.05	3.44	7.86	3.35	7.66	3.24	7.40
0.076	3.67	8.32	3.59	8.14	3.55	8.05	3.46	7.85	3.42	7.75	3.35	7.60	3.25	7.37
0.075	3.48	7.76	3.38	7.55	3.40	7.59	3.34	7.45	3.33	7.44	3.33	7.43	3.25	7.26
0.074	3.33	7.38	3.28	7.26	3.32	7.35	3.27	7.25	3.31	7.33	3.32	7.35	3.25	7.21

Calculated data: Field perpendicular to binary and trigonal axes; Hall probes parallel to trigonal axis. $R = (Vt)/(IH) \times 10^6$ ohm.-cm./gauss; V is corrected Hall voltage in millivolts; t = 0.42 cm.

Cur. (amps)	0.0200		0.0200		0.0200		0.0250		0.0350		0.0165		0.0165	
Temperature	1.3°K		1.82°K		2.21°K		2.58°K		3.15°K		3.71°K		4.2°K	
$(1/H) \times 10^3$	V	R	V	R	V	R	V	R	V	R	V	R	V	R
0.333	0.15	1.05	0.15	1.05	0.14	0.98	0.16	0.90	0.21	0.84	0.12	1.02	0.12	1.02
0.323	0.16	1.08	0.15	1.02	0.15	1.02	0.17	0.95	0.22	0.85	0.13	1.07	0.13	1.07
0.313	0.16	1.05	0.15	0.99	0.15	0.99	0.18	0.98	0.22	0.83	0.13	1.04	0.14	1.12
0.313	0.17	1.08	0.15	0.96	0.16	1.02	0.19	1.00	0.23	0.84	0.13	1.01	0.14	1.08
0.294	0.18	1.11	0.16	0.99	0.16	0.99	0.20	0.99	0.25	0.88	0.14	1.05	0.15	1.12
0.286	0.19	1.14	0.18	1.08	0.17	1.02	0.22	1.06	0.28	0.96	0.15	1.09	0.16	1.17
0.278	0.20	1.17	0.20	1.17	0.18	1.05	0.26	1.21	0.30	1.00	0.17	1.13	0.16	1.13
0.270	0.21	1.19	0.21	1.19	0.19	1.08	0.25	1.13	0.31	1.01	0.17	1.17	0.17	1.17
0.263	0.21	1.19	0.21	1.16	0.21	1.16	0.25	1.11	0.32	1.01	0.18	1.21	0.17	1.14
0.256	0.22	1.18	0.22	1.18	0.22	1.18	0.25	1.08	0.33	1.02	0.19	1.24	0.18	1.18
0.250	0.22	1.16	0.23	1.21	0.22	1.16	0.25	1.05	0.34	1.02	0.19	1.21	0.19	1.21
0.244	0.23	1.18	0.23	1.18	0.23	1.18	0.25	1.02	0.35	1.02	0.19	1.18	0.19	1.18
0.238	0.23	1.15	0.23	1.15	0.23	1.15	0.26	1.04	0.37	1.06	0.20	1.21	0.20	1.21
0.233	0.24	1.17	0.23	1.17	0.24	1.17	0.24	1.13	0.38	1.06	0.21	1.25	0.21	1.25

Cur. (amps)	0.0200		0.0200		0.0200		0.0250		0.0350		0.0165		0.0165	
Temperature	1.3°K		1.82°K		2.21°K		2.58°K		3.15°K		3.71°K		4.2°K	
$(1/H)\times10^3$	V	R	V	R	V	R	V	R	V	R	V	R	V	R
0.227	0.27	1.29	0.24	1.15	0.25	1.19	0.31	1.18	0.40	1.09	0.22	1.27	0.22	1.27
0.222	0.29	1.35	0.29	1.35	0.27	1.26	0.34	1.27	0.41	1.09	0.23	1.30	0.23	1.30
0.217	0.31	1.42	0.31	1.42	0.29	1.32	0.36	1.31	0.43	1.12	0.24	1.33	0.24	1.33
0.213	0.33	1.47	0.32	1.43	0.31	1.39	0.38	1.36	0.49	1.25	0.25	1.36	0.25	1.36
0.208	0.33	1.44	0.33	1.44	0.32	1.40	0.39	1.36	0.53	1.32	0.27	1.43	0.27	1.43
0.204	0.34	1.46	0.33	1.41	0.33	1.41	0.41	1.41	0.55	1.35	0.28	1.46	0.28	1.46
0.200	0.35	1.47	0.34	1.43	0.33	1.39	0.43	1.45	0.57	1.37	0.30	1.53	0.30	1.53
0.196	0.35	1.44	0.36	1.48	0.35	1.44	0.45	1.48	0.59	1.39	0.31	1.55	0.31	1.55
0.192	0.38	1.53	0.39	1.57	0.38	1.53	0.49	1.58	0.65	1.50	0.33	1.62	0.33	1.62
0.189	0.43	1.70	0.42	1.66	0.41	1.62	0.53	1.68	0.70	1.59	0.35	1.68	0.35	1.68
0.185	0.46	1.79	0.45	1.75	0.43	1.67	0.56	1.74	0.74	1.65	0.37	1.75	0.37	1.75
0.182	0.49	1.87	0.47	1.79	0.45	1.72	0.58	1.77	0.77	1.73	0.38	1.76	0.38	1.76
0.179	0.51	1.91	0.48	1.80	0.47	1.76	0.59	1.77	0.81	1.74	0.40	1.82	0.39	1.78
0.175	0.52	1.92	0.50	1.84	0.49	1.80	0.61	1.80	0.83	1.75	0.41	1.83	0.40	1.79
0.172	0.53	1.92	0.51	1.85	0.51	1.85	0.62	1.80	0.83	1.72	0.41	1.80	0.40	1.76
0.170	0.53	1.88	0.51	1.81	0.51	1.81	0.63	1.79	0.83	1.69	0.42	1.82	0.90	1.73

Cur. (amps)	0.0200		0.0200		0.0200		0.0250		0.0350		0.0165		0.0165	
Temperature	1.3°K		1.82°K		2.21°K		2.58°K		3.15°K		3.71°K		4.2°K	
$(1/H)\times10^3$	V	R	V	R	V	R	V	R	V	R	V	R	V	R
0.167	0.52	1.82	0.51	1.78	0.51	1.78	0.63	1.76	0.83	1.66	0.43	1.83	0.40	1.70
0.164	0.51	1.76	0.51	1.76	0.51	1.76	0.62	1.71	0.81	1.59	0.42	1.76	0.39	1.63
0.161	0.49	1.66	0.50	1.69	0.50	1.69	0.60	1.63	0.79	1.53	0.42	1.73	0.39	1.60
0.159	0.48	1.68	0.48	1.60	0.48	1.60	0.59	1.57	0.77	1.57	0.41	1.66	0.38	1.54
0.156	0.47	1.54	0.46	1.51	0.47	1.54	0.57	1.50	0.77	1.44	0.40	1.59	0.38	1.51
0.154	0.46	1.49	0.45	1.45	0.46	1.49	0.57	1.47	0.77	1.42	0.39	1.53	0.39	1.53
0.152	0.47	1.50	0.46	1.46	0.46	1.46	0.58	1.47	0.81	1.47	0.41	1.58	0.41	1.58
0.149	0.51	1.60	0.50	1.47	0.48	1.50	0.64	1.60	0.89	1.59	0.44	1.67	0.43	1.63
0.147	0.59	1.82	0.55	1.70	0.52	1.61	0.71	1.75	1.00	1.77	0.49	1.84	0.47	1.76
0.145	0.68	2.07	0.62	1.89	0.59	1.80	0.80	1.95	1.13	1.97	0.53	1.96	0.44	1.63
0.143	0.76	2.28	0.69	2.07	0.68	2.04	0.96	2.00	1.26	2.16	0.58	2.11	0.59	2.15
0.141	0.83	2.46	0.77	2.28	0.77	2.28	1.05	2.48	1.39	2.37	0.64	2.30	0.63	2.26
0.139	0.90	2.62	0.84	2.45	0.85	2.48	1.10	2.60	1.49	2.48	0.69	2.44	0.68	2.41
0.137	0.95	2.73	0.91	2.62	0.91	2.62	1.13	2.64	1.59	2.62	0.74	2.58	0.73	2.55
0.135	1.00	2.84	0.96	2.72	0.95	2.70	1.19	2.70	1.65	2.68	0.77	2.65	0.76	2.62
0.133	1.04	2.91	1.00	2.80	0.98	2.74	1.23	2.76	1.71	2.79	0.81	2.75	0.80	2.72

Cur. (amps)	0.0200		0.0200		0.0200		0.0250		0.0350		0.0165		0.0165	
Temperature	1.3°K		1.82°K		2.21°K		2.58°K		3.15°K		3.71°K		4.2°K	
$(1/H)x10^3$	V	R	V	R	V	R	V	R	V	R	V	R	V	R
0.132	1.07	2.96	1.04	2.88	1.01	2.79	1.27	2.81	1.77	2.80	0.84	2.82	0.85	2.85
0.130	1.09	2.97	1.08	2.95	1.05	2.84	1.31	2.86	1.82	2.84	0.87	2.88	0.87	2.88
0.128	1.13	3.04	1.12	3.02	1.09	2.94	1.36	2.93	1.88	2.89	0.90	2.94	0.90	2.94
0.127	1.16	3.08	1.15	3.06	1.13	3.00	1.42	3.02	1.96	2.98	0.93	3.00	0.93	3.00
0.125	1.21	3.18	1.19	3.12	1.17	3.07	1.47	3.09	2.04	3.06	0.96	3.06	0.95	3.03
0.123	1.25	3.24	1.23	3.19	1.21	3.14	1.52	3.15	2.10	3.11	0.99	3.12	0.97	3.05
0.122	1.29	3.30	1.27	3.24	1.25	3.20	1.56	3.20	2.15	3.15	1.01	3.14	1.00	3.11
0.121	1.34	3.39	1.30	3.29	1.38	3.50	1.61	3.26	2.19	3.17	1.02	3.13	1.02	3.13
0.119	1.37	3.42	1.32	3.30	1.31	3.28	1.63	3.26	2.23	3.19	1.04	3.16	1.03	3.13
0.118	1.38	3.41	1.34	3.31	1.33	3.29	1.67	3.30	2.26	3.19	1.05	3.15	1.05	3.15
0.116	1.39	3.39	1.36	3.32	1.34	3.27	1.68	3.28	2.27	3.17	1.07	3.18	1.05	3.12
0.115	1.39	3.36	1.37	3.31	1.35	3.26	1.69	3.26	2.28	3.14	1.07	3.14	1.06	3.11
0.114	1.39	3.31	1.37	3.27	1.36	3.24	1.69	3.23	2.27	3.09	1.07	3.10	1.06	3.08
0.112	1.38	3.26	1.37	3.23	1.35	3.18	1.68	3.17	2.26	3.05	1.07	3.06	1.06	3.04
0.111	1.36	3.17	1.36	3.17	1.34	3.12	1.66	3.10	2.23	2.98	1.07	3.04	1.06	3.00
0.110	1.33	3.07	1.33	3.07	1.32	3.04	1.63	3.01	2.21	2.92	1.06	2.98	1.05	2.95

Cur. (amps)	0.0200		0.0200		0.0200		0.0250		0.0350		0.0165		0.0165	
Temperature	1.3°K		1.82°K		2.21°K		2.58°K		3.15°K		3.71°K		4.2°K	
$(1/H)x10^3$	V	R	V	R	V	R	V	R	V	R	V	R	V	R
0.109	1.30	2.97	1.30	2.97	1.30	2.97	1.59	2.91	2.17	2.83	1.05	2.91	1.04	2.88
0.108	1.26	2.85	1.26	2.85	1.27	2.87	1.55	2.80	2.14	2.76	1.03	2.83	1.03	2.83
0.106	1.23	2.75	1.24	2.77	1.24	2.77	1.53	2.74	2.11	2.69	1.02	2.77	1.02	2.77
0.105	1.20	2.65	1.22	2.70	1.22	2.70	1.51	2.67	2.08	2.63	1.01	2.71	1.02	2.74
0.104	1.18	2.58	1.20	2.62	1.19	2.60	1.49	2.61	2.07	2.59	1.01	2.68	1.01	2.68
0.103	1.17	2.53	1.18	2.56	1.17	2.53	1.49	2.58	2.08	2.58	1.01	2.66	1.02	2.68
0.102	1.19	2.55	1.18	2.53	1.18	2.53	1.50	2.57	2.11	2.59	1.03	2.68	1.03	2.68
0.101	1.20	2.54	1.20	2.54	1.21	2.57	1.55	2.63	2.17	2.63	1.06	2.74	1.06	2.74
0.100	1.25	2.62	1.26	2.64	1.26	2.64	1.62	2.72	2.25	2.70	1.09	2.78	1.09	2.78
0.099	1.32	2.74	1.32	2.74	1.32	2.74	1.71	2.83	2.36	2.80	1.11	2.80	1.14	2.88
0.098	1.42	2.92	1.41	2.90	1.41	2.90	1.82	3.00	2.50	2.94	1.19	2.98	1.12	2.98
0.097	1.55	3.16	1.51	2.08	1.52	3.10	1.93	3.12	2.65	3.09	1.26	3.12	1.25	3.10
0.096	1.68	3.40	1.63	3.29	1.63	3.29	2.06	3.33	2.80	3.23	1.33	3.26	1.31	3.21
0.095	1.77	3.54	1.73	3.46	1.73	3.46	2.17	3.47	2.95	3.37	1.39	3.38	1.36	3.30
0.094	1.86	3.68	1.81	3.58	1.80	3.56	2.21	3.58	3.07	3.48	1.45	3.49	1.41	3.39
0.093	1.97	3.83	1.94	3.77	1.92	3.73	2.39	3.72	3.25	3.61	1.52	3.59	1.49	3.52

Cur. (amps)	0.0200		0.0200		0.0200		0.0250		0.0350		0.0165		0.0165	
Temperature	1.3°K		1.82°K		2.21°K		2.58°K		3.15°K		3.71°K		4.2°K	
$(1/H)\times10^3$	V	R	V	R	V	R	V	R	V	R	V	R	V	R
0.092	2.01	3.87	1.99	3.83	1.95	3.76	2.43	3.74	3.31	3.64	1.54	3.60	1.52	3.56
0.091	2.03	3.89	2.00	3.82	1.97	3.76	2.45	3.74	3.33	3.63	1.56	3.62	1.54	3.47
0.090	2.03	3.84	2.01	3.80	1.98	3.74	2.46	3.72	3.34	3.61	1.57	3.60	1.55	3.56
0.089	2.03	3.81	2.00	3.75	1.98	3.72	2.46	3.69	3.33	3.57	1.57	3.57	1.55	3.53
0.088	1.97	3.62	1.95	3.59	1.92	3.54	2.41	3.55	3.25	3.42	1.54	3.44	1.52	3.40
0.087	1.91	3.49	1.89	3.45	1.87	3.42	2.34	3.42	3.17	3.31	1.52	3.37	1.50	3.33
0.086	1.84	3.33	1.83	3.31	1.82	3.29	2.27	3.29	3.10	3.21	1.49	3.28	1.48	3.26
0.085	1.69	3.00	1.69	3.00	1.70	3.02	2.13	3.03	2.93	2.98	1.43	3.09	1.43	3.09
0.084	1.62	2.86	1.63	2.88	1.65	2.91	2.07	2.92	2.87	2.90	1.40	3.00	1.41	3.02
0.083	1.56	2.73	1.58	2.76	1.61	2.82	2.02	2.82	2.80	2.80	1.38	2.93	1.39	2.96
0.082	1.49	2.56	1.51	2.60	1.54	2.65	1.95	2.68	2.71	2.67	1.34	2.80	1.36	2.84
0.081	1.48	2.53	1.50	2.56	1.52	2.60	1.92	2.62	2.69	2.63	1.33	2.76	1.35	2.80
0.080	1.46	2.45	1.48	2.49	1.51	2.54	1.91	2.56	1.68	2.57	1.32	2.69	1.35	2.75
0.079	1.45	2.42	1.48	2.47	1.51	2.52	1.92	2.56	2.70	2.57	1.33	2.69	1.36	2.75
0.078	1.45	2.38	1.50	2.46	1.54	2.52	1.95	2.56	2.81	2.63	1.37	2.73	1.41	2.81
0.077	1.55	2.50	1.60	2.58	1.66	2.68	2.12	2.74	3.07	2.83	1.49	2.92	1.51	2.96

Cur. (amps)	0.0200		0.0200		0.0200		0.0250		0.0350		0.0165		0.0165	
Temperature	1.3°K		1.82°K		2.21°K		2.58°K		3.15°K		3.71°K		4.2°K	
$(1/H)x10^3$	V	R	V	R	V	R	V	R	V	R	V	R	V	R
0.076	1.65	2.64	1.71	2.74	1.75	2.80	2.27	2.78	3.28	3.00	1.56	3.04	1.58	3.08
0.075	1.97	3.11	2.05	3.24	2.03	3.21	2.67	3.37	3.82	3.44	1.79	3.43	1.80	3.45
0.074	2.22	3.48	2.28	3.58	2.22	3.48	2.93	3.67	4.20	3.76	1.95	3.71	1.94	3.69

Calculated data: Field perpendicular to binary and trigonal axis; Hall probes parallel to binary axis. $R = (Vt)/(IH) \times 10^6$ ohm-cm./gauss; V is corrected Hall voltage in millivolts; t = 0.42 cm.

Cur. (amps)	0.0200		0.0200		0.0200		0.0250		0.0350		0.0165		0.0165	
Temperature	1.3°K		1.82°K		2.21°K		2.58°K		3.15°K		3.71°K		4.2°K	
$(1/H) \times 10^3$	V	R	V	R	V	R	V	R	V	R	V	R	V	R
0.333	0.13	0.91	0.14	0.98	0.13	0.91	0.16	0.90	0.20	0.80	0.12	1.02	0.11	0.93
0.323	0.14	0.95	0.15	1.02	0.14	0.95	0.17	0.92	0.21	0.81	0.13	1.07	0.12	0.99
0.313	0.15	0.98	0.15	0.98	0.15	0.98	0.17	0.89	0.21	0.79	0.14	1.15	0.12	0.96
0.303	0.16	1.02	0.15	0.95	0.15	0.95	0.18	0.92	0.23	0.84	0.14	1.08	0.13	1.00
0.294	0.17	1.05	0.16	0.99	0.16	0.99	0.19	0.94	0.25	0.88	0.15	1.12	0.14	1.05
0.286	0.19	1.14	0.17	1.02	0.17	1.02	0.21	1.01	0.26	0.89	0.16	1.17	0.15	1.09
0.278	0.20	1.16	0.18	1.05	0.19	1.12	0.22	1.03	0.29	0.96	0.17	1.20	0.16	1.13
0.270	0.21	1.19	0.20	1.14	0.20	1.14	0.24	1.09	0.31	1.01	0.17	1.17	0.17	1.17
0.263	0.22	1.21	0.21	1.16	0.21	1.16	0.25	1.11	0.32	1.01	0.18	1.21	0.17	1.14
0.256	0.23	1.24	0.22	1.18	0.22	1.18	0.26	1.12	0.33	1.02	0.18	1.18	0.18	1.18
0.250	0.23	1.21	0.23	1.21	0.22	1.15	0.27	1.13	0.34	1.02	0.19	1.21	0.19	1.21
0.244	0.23	1.18	0.23	1.18	0.23	1.18	0.27	1.11	0.35	1.02	0.19	1.18	0.19	1.18
0.238	0.23	1.15	0.23	1.15	0.23	1.15	0.27	1.08	0.36	1.03	0.20	1.21	0.19	1.15
0.233	0.23	1.12	0.23	1.12	0.23	1.12	0.28	1.09	0.37	1.03	0.21	1.25	0.20	1.19

Cur. (amps)	0.0200		0.0200		0.0200		0.0250		0.0350		0.0165		0.0165	
Temperature	0.3^{o}K		1.82^{o}K		2.21^{o}K		2.58^{o}K		3.15^{o}K		3.71^{o}K		4.2^{o}K	
$(1/H)x10^{3}$	V	R	V	R	V	R	V	R	V	R	V	R	V	R
0.227	0.24	1.15	0.24	1.15	0.25	1.19	0.30	1.14	0.39	1.06	0.22	1.28	0.21	1.22
0.222	0.26	1.21	0.25	1.17	0.27	1.26	0.32	1.19	0.43	1.15	0.24	1.36	0.22	1.25
0.217	0.30	1.37	0.27	1.23	0.29	1.32	0.35	1.28	0.47	1.23	0.25	1.39	0.24	1.33
0.213	0.32	1.43	0.30	1.34	0.31	1.38	0.37	1.32	0.50	1.28	0.26	1.41	0.26	1.41
0.208	0.33	1.44	0.33	1.44	0.33	1.44	0.39	1.36	0.53	1.32	0.27	1.44	0.27	1.44
0.204	0.33	1.41	0.35	1.50	0.34	1.46	0.40	1.37	0.55	1.35	0.29	1.46	0.29	1.46
0.200	0.34	1.43	0.35	1.47	0.35	1.47	0.41	1.38	0.57	1.37	0.30	1.53	0.30	1.53
0.196	0.35	1.44	0.35	1.44	0.36	1.48	0.43	1.42	0.59	1.39	0.32	1.60	0.31	1.55
0.192	0.38	1.54	0.37	1.49	0.39	1.58	0.46	1.49	0.61	1.41	0.34	1.67	0.33	1.62
0.189	0.41	1.62	0.40	1.58	0.41	1.62	0.50	1.59	0.67	1.52	0.36	1.73	0.35	1.68
0.185	0.45	1.75	0.43	1.67	0.44	1.71	0.55	1.71	0.72	1.60	0.37	1.75	0.36	1.70
0.182	0.47	1.80	0.46	1.76	0.45	1.72	0.57	1.74	0.77	1.68	0.39	1.81	0.37	1.72
0.179	0.46	1.84	0.48	1.80	0.47	1.76	0.59	1.77	0.80	1.72	0.39	1.78	0.39	1.78
0.175	0.51	1.88	0.50	1.84	0.49	1.81	0.61	1.80	0.81	1.71	0.41	1.84	0.39	1.75
0.172	0.52	1.88	0.51	1.85	0.50	1.81	0.62	1.80	0.83	1.72	0.41	1.80	0.40	1.76
0.170	0.53	1.89	0.52	1.85	0.51	1.81	0.63	1.79	0.83	1.69	0.41	1.77	0.40	1.73

Cur. (amps)	0.0200		0.0200		0.0200		0.0250		0.0350		0.0165		0.0165	
Temperature	1.3°K		1.82°K		2.21°K		2.58°K		3.15°K		3.71°K		4.2°K	
$(1/H) \times 10^3$	V	R	V	R	V	R	V	R	V	R	V	R	V	R
0.167	0.53	1.85	0.52	1.82	0.51	1.78	0.63	1.76	0.83	1.66	0.41	1.74	0.40	1.70
0.164	0.52	1.79	0.52	1.79	0.50	1.72	0.62	1.71	0.82	1.61	0.41	1.71	0.40	1.67
0.161	0.50	1.69	0.51	1.73	0.49	1.66	0.60	1.63	0.79	1.53	0.41	1.69	0.40	1.64
0.159	0.47	1.57	0.49	1.63	0.48	1.60	0.57	1.52	0.79	1.51	0.40	1.62	0.40	1.62
0.156	0.45	1.48	0.47	1.54	0.47	1.54	0.56	1.47	0.78	1.46	0.40	1.59	0.41	1.63
0.154	0.44	1.42	0.46	1.48	0.46	1.48	0.56	1.45	0.77	1.42	0.41	1.61	0.41	1.61
0.152	0.43	1.37	0.45	1.43	0.45	1.43	0.57	1.45	0.79	1.44	0.42	1.62	0.43	1.66
0.149	0.45	1.41	0.46	1.44	0.47	1.47	0.61	1.53	0.85	1.52	0.45	1.71	0.44	1.67
0.147	0.51	1.57	0.49	1.51	0.51	1.57	0.69	1.70	0.95	1.68	0.48	1.80	0.46	1.73
0.145	0.60	1.83	0.55	1.67	0.59	1.80	0.78	1.90	1.08	1.88	0.54	2.00	0.50	1.85
0.143	0.70	2.10	0.66	1.98	0.69	2.07	0.88	2.11	1.25	2.14	0.61	2.22	0.55	2.00
0.141	0.79	2.34	0.78	2.31	0.77	2.28	0.99	2.34	1.38	2.33	0.66	2.37	0.61	2.19
0.139	0.87	2.54	0.76	2.22	0.84	2.45	1.09	2.54	1.50	2.50	0.72	2.55	0.66	2.34
0.137	0.94	2.70	0.93	2.68	0.90	2.59	1.15	2.65	1.59	2.62	0.75	2.62	0.71	2.48
0.135	0.99	2.81	0.98	2.78	0.95	2.70	1.21	2.75	1.65	2.68	0.79	2.72	0.77	2.65
0.133	1.03	2.88	1.01	2.83	1.00	2.80	1.25	2.80	1.71	2.74	0.82	2.78	0.80	2.72

Cur. (amps)	0.0200		0.0200		0.0200		0.0250		0.0350		0.0165		0.0165	
Temperature	1.3°K		1.82°K		2.21°K		2.58°K		3.15°K		3.71°K		4.2°K	
$(1/H)\times 10^3$	V	R	V	R	V	R	V	R	V	R	V	R	V	R
0.132	1.07	2.96	1.04	2.88	1.03	2.85	1.29	2.85	1.77	2.80	0.85	2.85	0.83	2.78
0.130	1.09	2.97	1.06	2.89	1.05	2.86	1.31	2.86	1.81	2.82	0.87	2.88	0.85	2.81
0.128	1.11	2.99	1.08	2.91	1.07	2.88	1.35	2.91	1.84	2.83	0.89	2.91	0.87	2.84
0.127	1.13	3.00	1.11	2.95	1.09	2.90	1.39	2.96	1.89	2.87	0.91	2.94	0.90	2.90
0.125	1.17	3.07	1.15	3.02	1.15	3.02	1.45	3.05	1.98	2.97	0.93	2.96	0.93	2.96
0.123	1.23	3.19	1.21	3.14	1.20	3.11	1.51	3.13	2.06	3.05	0.97	5.05	0.96	3.02
0.122	1.28	3.30	1.25	3.20	1.24	3.18	1.57	3.22	2.13	3.12	1.01	3.14	0.99	3.08
0.121	1.32	3.34	1.31	3.32	1.28	3.24	1.61	3.26	2.19	3.17	1.04	3.20	1.01	3.11
0.119	1.35	3.38	1.34	3.35	1.31	3.28	1.64	3.28	2.23	3.19	1.06	3.22	1.03	3.13
0.118	1.38	3.41	1.35	3.35	1.34	3.31	1.67	3.30	2.26	3.19	1.07	3.21	1.05	3.15
0.116	1.39	3.40	1.37	3.34	1.35	3.30	1.68	3.28	2.28	3.18	1.08	3.20	1.06	3.14
0.115	1.40	3.38	1.37	3.30	1.36	3.28	1.69	3.26	2.29	3.16	1.09	3.20	1.07	3.14
0.114	1.40	3.34	1.37	3.27	1.36	3.25	1.69	3.23	2.29	3.12	1.09	3.16	1.07	3.10
0.112	1.40	3.30	1.36	3.21	1.36	3.21	1.68	3.19	2.28	3.08	1.09	3.12	1.07	3.07
0.111	1.39	3.24	1.35	3.15	1.35	3.15	1.66	3.10	2.27	3.03	1.08	3.06	1.07	3.03
0.110	1.37	3.16	1.33	3.07	1.33	3.07	1.63	3.01	2.23	2.94	1.07	3.00	1.06	2.97

Cur. (amp)	0.0200		0.0200		0.0200		0.0250		0.0350		0.0165		0.0165	
Temperature	1.3°K		1.82°K		2.21°K		2.58°K		3.15°K		3.71°K		4.2°K	
$(1/H) \times 10^3$	V	R	V	R	V	R	V	R	V	R	V	R	V	R
0.109	1.34	3.06	1.31	2.99	1.30	2.97	1.61	2.94	2.19	2.86	1.06	2.94	1.05	2.91
0.108	1.30	2.94	1.27	2.87	1.27	2.87	1.57	2.84	2.15	2.77	1.04	2.85	1.04	2.85
0.106	1.25	2.79	1.23	2.75	1.23	2.75	1.53	2.74	2.11	2.69	1.03	2.80	1.03	2.80
0.105	1.21	2.68	1.20	2.65	1.20	2.65	1.51	2.67	2.09	2.65	1.02	2.74	1.03	2.77
0.104	1.17	2.56	1.17	2.56	1.18	2.56	1.49	2.61	2.07	2.59	1.01	2.68	1.02	2.71
0.103	1.15	2.49	1.16	2.51	1.17	2.53	1.49	2.58	2.07	2.56	1.02	2.68	1.02	2.68
0.102	1.15	2.46	1.15	2.46	1.17	2.51	1.51	2.59	2.07	2.54	1.02	2.66	1.03	2.68
0.101	1.17	2.48	1.17	2.48	1.20	2.55	1.57	2.67	2.13	2.58	1.05	2.71	1.05	2.71
0.100	1.21	2.54	1.21	2.54	1.25	2.62	1.65	2.77	2.21	2.65	1.08	2.75	1.09	2.78
0.099	1.29	2.68	1.30	2.70	1.33	2.76	1.73	2.88	2.31	2.75	1.13	2.86	1.13	2.86
0.098	1.41	2.90	1.40	2.88	1.42	2.92	1.84	3.03	2.44	2.87	1.19	2.98	1.19	2.98
0.097	1.55	3.16	1.51	3.08	1.51	3.08	1.94	3.16	2.59	3.01	1.25	3.10	1.25	3.10
0.096	1.69	3.41	1.62	3.27	1.64	3.31	2.05	3.31	2.76	3.18	1.33	3.26	1.31	3.21
0.095	1.79	3.58	1.71	3.42	1.74	3.48	2.15	3.44	2.92	3.34	1.39	3.38	1.37	3.38
0.094	1.87	3.70	1.80	3.56	1.81	3.58	2.25	3.57	3.06	3.46	1.45	3.49	1.42	3.42
0.093	1.98	3.85	1.93	3.75	1.91	3.72	2.40	3.73	3.25	3.61	1.53	3.61	1.49	3.52

Cur. (amp)	0.0200		0.0200		0.0200		0.0250		0.0350		0.0165		0.0165	
Temperature	1.3°K		1.82°K		2.21°K		2.58°K		3.15°K		3.71°K		4.2°K	
$(1/H) \times 10^3$	V	R	V	R	V	R	V	R	V	R	V	R	V	R
0.092	2.01	3.88	1.97	3.80	1.95	3.76	2.44	3.76	3.30	3.63	1.56	3.66	1.53	3.58
0.091	2.04	3.90	1.99	3.80	1.97	3.76	2.46	3.76	3.33	3.63	1.57	3.64	1.54	3.57
0.090	2.05	3.88	1.99	3.78	1.99	3.78	2.47	3.74	3.34	3.61	1.58	3.63	1.55	3.56
0.089	2.05	3.84	2.00	3.75	1.98	3.71	2.46	3.69	3.34	3.59	1.58	3.60	1.56	3.55
0.088	1.99	3.66	1.96	3.61	1.94	3.57	2.40	3.54	3.27	3.44	1.55	3.47	1.53	3.42
0.087	1.94	3.54	1.90	3.47	1.88	3.44	2.34	3.42	3.19	3.33	1.53	3.39	1.52	3.37
0.086	1.87	3.38	1.84	3.33	1.83	3.32	2.27	3.29	3.14	3.25	1.51	3.32	1.49	3.28
0.085	1.73	3.08	1.71	3.04	1.72	3.06	2.15	3.06	2.97	3.02	1.45	3.24	1.44	3.11
0.084	1.66	2.93	1.65	2.91	1.67	2.95	2.09	2.95	2.92	2.94	1.43	3.06	1.42	3.04
0.083	1.61	2.82	1.61	2.82	1.63	2.85	2.04	2.86	2.86	2.86	1.41	3.00	1.40	2.97
0.082	1.54	2.65	1.54	2.65	1.57	2.70	1.98	2.73	2.77	2.72	1.37	2.86	1.37	2.86
0.081	1.52	2.60	1.53	2.61	1.56	2.66	1.97	2.69	2.75	2.68	1.35	2.80	1.37	2.84
0.080	1.51	2.54	1.51	2.54	1.54	2.59	1.95	2.62	2.74	2.63	1.35	2.75	1.37	2.79
0.079	1.51	2.52	1.50	2.50	1.53	2.55	1.95	2.60	2.74	2.61	1.35	2.73	1.38	2.79
0.078	1.46	2.40	1.49	2.44	1.53	2.51	1.97	2.59	2.79	2.62	1.39	2.77	1.41	2.81
0.077	1.49	2.40	1.52	2.46	1.61	2.60	2.09	2.70	2.97	2.74	1.47	2.88	1.51	2.96

Cur. (amps)	0.0200		0.0200		0.0200		0.0250		0.0350		0.0165		0.0165	
Temperature	1.3°K		1.82°K		2.21°K		2.58°K		3.15°K		3.71°K		4.20°K	
$(1/\underline{H})\times10^3$	V	R	V	R	V	R	V	R	V	R	V	R	V	R
0.076	1.57	2.52	1.63	2.61	1.71	2.74	2.20	2.82	3.13	2.87	1.55	3.01	1.58	3.07
0.075	1.93	3.05	1.91	3.02	2.00	3.16	2.54	3.21	3.63	3.28	1.75	3.35	1.77	3.39
0.074	2.17	3.40	2.10	3.29	2.18	3.42	2.80	3.51	3.91	3.50	1.89	3.60	1.89	3.60

Calculated data: Field parallel binary, Hall probes perpendicular to trigonal and binary axes. $R = (Vt)/(IH) \times 10^6$ ohm-cm./gauss; V is corrected Hall voltage in milli-volts, t = 0.56 cm.; I = 0.0417 amp.

Temperature	1.3°K		1.82°K		2.21°K		2.58°K		3.15°K		3.71°K		4.2°K	
$(1/H) \times 10^3$	V	R	V	R	V	R	V	R	V	R	V	R	V	R
0.333	0.17	0.76	0.17	0.76	0.17	0.76	0.18	0.81	1.70	0.76	0.17	0.76	0.18	0.81
0.323	0.18	0.78	0.18	0.78	0.17	0.74	0.19	0.83	1.80	0.78	0.18	0.78	0.19	0.83
0.313	0.19	0.80	0.19	0.80	0.17	0.72	0.19	0.80	1.90	0.80	0.19	0.80	0.20	0.85
0.303	0.20	0.82	0.20	0.82	0.19	0.78	0.20	0.82	2.00	0.82	0.21	0.86	0.21	0.86
0.294	0.21	0.83	0.21	0.83	0.20	0.79	0.22	0.87	2.10	0.83	0.23	0.91	0.22	0.87
0.286	0.22	0.84	0.23	0.88	0.23	0.88	0.25	0.96	2.20	0.84	0.24	0.92	0.25	0.96
0.278	0.23	0.86	0.25	0.93	0.25	0.93	0.26	0.97	2.40	0.90	0.25	0.93	0.20	0.97
0.270	0.26	0.95	0.27	0.98	0.27	0.98	0.28	1.02	2.50	0.91	0.27	0.98	0.27	0.98
0.263	0.28	0.99	0.28	0.99	0.28	0.99	0.29	1.02	2.70	0.95	0.28	0.99	0.28	0.99
0.256	0.29	1.00	0.29	1.00	0.29	1.00	0.29	1.00	2.80	0.97	0.28	0.97	0.28	0.97
0.250	0.30	1.01	0.29	0.98	0.29	0.98	0.29	0.98	2.90	0.98	0.28	0.94	0.28	0.94
0.244	0.30	0.98	0.29	0.95	0.29	0.95	0.29	0.95	2.90	0.95	0.28	0.92	0.28	0.92
0.238	0.29	0.93	0.29	0.93	0.29	0.93	0.29	0.93	2.90	0.93	0.28	0.90	0.28	0.90
0.233	0.29	0.91	0.29	0.91	0.29	0.91	0.29	0.91	2.90	0.91	0.30	0.94	0.31	0.97
0.227	0.29	0.89	0.29	0.89	0.29	0.89	0.31	0.95	2.90	0.89	0.32	0.98	0.35	1.07

Temperature	1.3°K		1.82°K		2.21°K		2.58°K		3.15°K		3.71°K		4.2°K	
$(1/H)\times10^5$	V	R	V	R	V	R	V	R	V	R	V	R	V	R
0.222	0.31	0.93	0.32	0.96	0.31	0.93	0.35	1.04	0.31	0.93	0.35	1.04	0.39	1.16
0.217	0.33	0.47	0.37	1.05	0.32	0.94	0.39	1.14	0.35	1.02	0.38	1.11	0.41	1.20
0.213	0.40	1.14	0.43	1.23	0.37	1.06	0.43	1.23	0.39	1.12	0.41	1.17	0.44	1.26
0.208	0.45	1.26	0.47	1.32	0.41	1.15	0.46	1.29	0.43	1.21	0.45	1.26	0.46	1.29
0.204	0.49	1.34	0.49	1.34	0.45	1.23	0.48	1.32	0.47	1.29	0.47	1.29	0.48	1.32
0.200	0.51	1.37	0.51	1.37	0.49	1.32	0.51	1.37	0.49	1.32	0.49	1.32	0.50	1.34
0.196	0.53	1.40	0.53	1.40	0.51	1.34	0.53	1.40	0.51	1.34	0.50	1.32	0.51	1.34
0.192	0.55	1.42	0.55	1.42	0.54	1.40	0.54	1.40	0.53	1.37	0.51	1.32	0.52	1.34
0.189	0.57	1.45	0.56	1.42	0.56	1.42	0.55	1.40	0.54	1.37	0.52	1.32	0.53	1.34
0.185	0.59	1.47	0.57	1.42	0.57	1.42	0.55	1.37	0.54	1.34	0.53	1.32	0.53	1.32
0.182	0.59	1.44	0.57	1.39	0.57	1.39	0.55	1.34	0.55	1.34	0.53	1.29	0.53	1.29
0.179	0.58	1.39	0.57	1.37	0.37	0.55	0.55	1.32	0.55	1.32	0.53	1.27	0.53	1.27
0.175	0.56	1.32	0.57	1.34	0.56	1.32	0.56	1.32	0.55	1.30	0.53	1.25	0.53	1.25
0.172	0.56	1.30	0.57	1.32	0.56	1.30	0.57	1.32	0.55	1.27	0.55	1.27	0.55	1.27
0.170	0.58	1.32	0.58	1.32	0.57	1.30	0.58	1.32	0.56	1.28	0.57	1.30	0.56	1.28
0.167	0.60	1.34	0.59	1.32	0.59	1.32	0.59	1.32	0.58	1.30	0.58	1.30	0.58	1.30
0.164	0.61	1.34	0.60	1.32	0.60	1.32	0.59	1.30	0.59	1.30	0.59	1.30	0.60	1.32

Temperature (1/H)x10^3	1.3^{o}K V	1.3^{o}K R	1.82^{o}K V	1.82^{o}K R	2.21^{o}K V	2.21^{o}K R	2.58^{o}K V	2.58^{o}K R	3.15^{o}K V	3.15^{o}K R	3.71^{o}K V	3.71^{o}K R	4.2^{o}K V	4.2^{o}K R
0.161	0.61	1.32	0.60	1.30	0.61	1.32	0.60	1.30	0.60	1.30	0.61	1.32	0.63	1.37
0.159	0.61	1.30	0.61	1.30	0.63	1.34	0.62	1.32	0.61	1.30	0.62	1.32	0.65	1.39
0.156	0.61	1.28	0.62	1.30	0.65	1.36	0.64	1.34	0.63	1.32	0.65	1.36	0.69	1.45
0.154	0.63	1.30	0.65	1.34	0.67	1.39	0.67	1.39	0.65	1.30	0.69	1.43	0.73	1.51
0.152	0.69	1.41	0.70	1.43	0.71	1.45	0.71	1.45	0.70	1.43	0.75	1.53	0.79	1.61
0.149	0.78	1.57	0.79	1.58	0.77	1.55	0.79	1.58	0.79	1.58	0.83	1.67	0.85	1.71
0.147	0.89	1.76	0.90	1.78	0.89	1.76	0.90	1.78	0.89	1.76	0.89	1.76	0.94	1.86
0.145	0.99	1.93	0.99	1.93	0.99	1.93	1.00	1.95	0.96	1.87	0.96	1.87	1.00	1.95
0.143	1.06	2.04	1.05	2.02	1.07	2.06	1.07	2.06	1.03	1.98	1.02	1.47	1.04	2.01
0.141	1.11	2.10	1.11	2.10	1.12	2.12	1.12	2.12	1.08	2.04	1.06	2.01	1.08	2.04
0.139	1.15	2.15	1.15	2.15	1.16	2.16	1.15	2.15	1.10	2.07	1.10	2.06	1.11	2.07
0.137	1.19	2.19	1.19	2.19	1.19	2.19	1.17	2.16	1.14	2.10	1.13	1.90	1.14	2.10
0.135	1.23	2.24	1.21	2.20	1.22	2.22	1.20	2.18	1.16	2.11	1.17	2.12	1.17	2.12
0.133	1.26	2.26	1.25	2.24	1.25	2.24	1.24	2.22	1.19	3.14	1.21	2.17	1.19	2.14
0.132	1.30	2.30	1.28	2.26	1.28	2.26	1.27	2.25	1.23	2.18	1.22	2.16	1.21	2.14
0.130	1.33	2.32	1.32	2.30	1.30	2.27	1.30	2.27	1.26	2.20	1.24	2.16	1.22	2.13
0.128	1.35	2.31	1.35	2.31	1.32	2.28	1.31	2.26	1.28	2.21	1.25	2.15	1.23	2.12

Temperature (1/H)x10^3	1.3°K		1.82°K		2.21°K		2.58°K		3.15°K		3.71°K		4.2°K	
	V	R	V	R	V	R	V	R	V	R	V	R	V	R
0.127	1.38	2.35	1.37	2.33	1.33	2.26	1.32	2.24	1.29	2.20	1.26	2.14	1.23	2.09
0.125	1.39	2.34	1.38	2.32	1.35	2.27	1.32	2.22	1.30	2.18	1.27	2.14	1.24	2.08
0.123	1.40	2.32	1.37	2.28	1.34	2.22	1.32	2.12	1.30	2.16	1.27	2.11	1.24	2.06
0.122	1.39	2.28	1.36	2.23	1.34	2.20	1.31	2.15	1.29	2.12	1.26	2.07	1.24	2.04
0.121	1.37	2.22	1.34	2.17	1.33	2.16	1.29	2.09	1.28	2.08	1.26	2.04	1.24	2.01
0.119	1.32	2.11	1.30	2.08	1.29	2.06	1.27	2.03	1.27	2.03	1.25	2.00	1.24	1.98
0.118	1.28	2.02	1.27	2.01	1.27	2.01	1.26	1.99	1.26	1.99	1.25	1.98	1.25	1.98
0.116	1.25	1.95	1.24	1.95	1.25	1.95	1.26	1.97	1.26	1.97	1.26	1.97	1.27	1.98
0.115	1.24	1.92	1.25	1.93	1.25	1.93	1.27	1.96	1.28	1.98	1.28	1.98	1.29	1.99
0.114	1.23	1.88	1.25	1.91	1.27	1.94	1.30	1.99	1.30	1.99	1.31	2.00	1.33	2.03
0.112	1.25	1.89	1.28	1.94	1.30	1.97	1.35	2.04	1.34	2.02	1.37	2.07	1.39	2.10
0.111	1.30	1.94	1.34	2.00	1.35	2.02	1.43	2.14	1.41	2.10	1.43	2.14	1.45	2.16
0.110	1.38	2.04	1.43	2.11	1.43	2.11	1.51	2.23	1.48	2.19	1.51	2.23	1.53	2.26
0.109	1.49	2.18	1.55	2.26	1.52	2.22	1.62	2.37	1.58	2.31	1.60	2.34	1.61	2.36
0.108	1.63	2.36	1.68	2.43	1.63	2.36	1.72	2.49	1.67	2.42	1.69	2.44	1.70	2.46
0.106	1.77	2.53	1.80	2.58	1.75	2.50	1.82	2.60	1.78	2.54	1.79	2.56	1.78	2.54
0.105	1.90	2.69	1.93	2.73	1.89	2.68	1.93	2.73	1.88	2.66	1.87	2.65	1.87	2.65

Temperature	1.3°K		1.82°K		2.21°K		2.58°K		3.15°K		3.71°K		4.2°K	
$(1/H) \times 10^3$	V	R	V	R	V	R	V	R	V	R	V	R	V	R
0.104	2.02	2.82	2.03	2.84	2.02	2.82	2.02	2.82	1.98	2.77	1.95	2.75	1.95	2.73
0.103	2.14	2.96	2.16	2.86	2.13	2.95	2.11	2.92	2.07	2.87	2.05	2.84	2.02	2.80
0.102	2.23	3.06	2.25	3.09	2.23	3.06	2.21	3.03	2.16	2.96	2.12	2.91	2.09	2.87
0.101	2.32	3.15	2.34	3.18	2.31	3.14	2.27	3.08	2.23	3.03	2.19	2.98	2.15	2.92
0.100	2.39	3.21	2.40	3.22	2.36	3.17	2.33	3.13	2.29	3.08	2.25	3.02	2.20	2.96
0.099	2.45	3.26	2.45	3.26	2.41	3.20	2.39	3.18	2.33	3.10	2.29	3.05	2.25	3.00
0.098	2.50	3.33	2.48	3.27	2.45	3.23	2.43	3.20	2.38	3.14	2.31	3.04	2.28	3.00
0.097	2.53	3.33	2.51	3.28	2.48	3.24	2.46	3.21	2.41	3.15	2.37	3.09	2.31	3.01
0.096	2.55	3.33	2.53	3.27	2.50	3.23	2.49	3.22	2.43	3.14	2.39	3.09	2.33	3.01
0.095	2.56	3.28	2.53	3.25	2.51	3.21	2.50	3.20	2.45	3.13	2.41	3.08	2.34	3.00
0.094	2.57	3.26	2.55	3.24	2.52	3.20	2.51	3.18	2.46	3.12	2.41	3.06	2.35	2.98
0.093	2.57	3.20	2.55	3.17	2.53	3.15	2.51	3.12	2.47	3.08	2.42	3.01	2.36	2.94
0.092	2.56	3.16	2.55	3.15	2.53	3.12	2.51	3.10	2.47	3.05	2.42	2.98	2.37	2.92
0.091	2.55	3.12	2.54	3.10	2.52	3.08	2.50	3.05	2.47	3.02	2.42	2.96	2.37	2.40
0.090	2.53	3.06	2.53	3.06	2.51	3.04	2.49	3.01	2.46	2.98	2.41	2.92	2.36	2.86
0.089	2.51	3.01	2.52	3.02	2.49	2.99	2.47	2.96	2.45	2.94	2.40	2.88	2.35	2.82
0.088	2.49	2.93	2.49	2.93	2.45	2.89	2.92	2.85	2.42	2.85	2.38	2.80	2.34	2.76

Temperature	$1.3^{o}K$		$1.82^{o}K$		$2.21^{o}K$		$2.58^{o}K$		$3.15^{o}K$		$3.71^{o}K$		$4.2^{o}K$	
$(1/H)x10^3$	V	R	V	R	V	R	V	R	V	R	V	R	V	R
0.087	2.47	2.89	2.46	2.88	2.42	2.83	2.38	2.78	2.40	2.80	2.36	2.76	2.33	2.72
0.086	2.44	2.83	2.42	2.80	2.39	2.77	2.38	2.72	2.37	2.75	2.34	2.71	2.31	2.68
0.085	2.34	2.66	2.33	2.65	2.30	2.62	2.27	2.59	2.31	2.63	2.29	2.61	2.27	2.59
0.084	2.28	2.58	2.27	2.57	2.25	2.54	2.23	2.52	2.27	2.57	2.26	2.55	2.25	2.54
0.083	2.19	2.45	2.21	2.48	2.21	2.48	2.20	2.46	2.24	2.51	2.24	2.51	2.23	2.50
0.082	2.09	2.30	2.13	2.35	2.13	2.35	2.15	2.37	2.19	2.41	2.19	2.41	2.20	2.42
0.081	2.09	2.29	2.13	2.33	2.13	2.33	2.15	2.35	2.18	2.38	2.19	2.39	2.20	2.40
0.080	2.15	2.31	2.19	2.35	2.17	2.33	2.19	2.35	2.19	2.35	2.21	2.31	2.22	2.38
0.079	2.21	2.36	2.23	2.38	2.21	2.36	2.21	2.36	2.20	2.34	2.23	2.38	2.23	2.38
0.078	2.25	2.36	2.26	2.37	2.24	2.35	2.26	2.37	2.27	2.38	2.31	2.43	2.29	2.40
0.077	2.21	2.29	2.24	2.32	2.25	2.33	2.29	2.37	2.31	2.39	2.36	2.44	2.37	2.45
0.076	2.17	2.23	2.24	2.30	2.28	2.34	2.32	2.38	2.38	2.44	2.41	2.47	2.43	2.50
0.075	2.31	2.34	2.41	2.44	2.44	2.46	2.49	2.52	2.55	2.58	2.57	2.60	2.62	2.65
0.074	2.55	2.56	2.60	2.61	2.59	2.60	2.64	2.65	2.67	2.68	2.69	2.70	2.72	2.74

Calculated Data: Field parallel to binary; Hall probes parallel to trigonal axis. R = (Vt)/(IH) x 10^6 ohm-cm./gauss; V is corrected Hall voltage in milli-volts; t = 0.56 cm.; I = 0.0417 amp.

Temperature	13.°K		1.82°K		2.21°K		2.58°K		3.15°K		3.71°K		4.2°K	
(1/H)x10^3	V	R	V	R	V	R	V	R	V	R	V	R	V	R
0.333	0.19	0.85	0.19	0.85	0.17	0.76	0.19	0.85	0.18	0.51	0.17	0.76	0.19	0.85
0.323	0.20	0.87	0.20	0.87	0.18	0.78	0.20	0.87	0.19	0.83	0.18	0.78	0.20	0.87
0.313	0.21	0.88	0.21	0.88	0.19	0.80	0.21	0.88	0.21	0.88	0.19	0.80	0.21	0.88
0.303	0.22	0.90	0.22	0.90	0.21	0.86	0.22	0.90	0.22	0.90	0.20	0.82	0.22	0.90
0.294	0.23	0.91	0.24	0.95	0.24	0.95	0.24	0.95	0.24	0.95	0.22	0.87	0.23	0.91
0.286	0.25	0.96	0.27	1.04	0.25	0.96	0.26	1.00	0.26	1.00	0.24	0.92	0.25	0.96
0.278	0.27	1.01	0.29	1.08	0.27	1.01	0.28	1.04	0.27	1.01	0.26	0.97	0.27	1.01
0.270	0.29	1.05	0.30	1.09	0.29	1.05	0.29	1.05	0.29	1.05	0.27	0.98	0.28	1.02
0.203	0.31	1.10	0.31	1.10	0.30	1.06	0.30	1.06	0.30	1.06	0.29	1.03	0.29	1.03
0.256	0.31	1.10	0.31	1.07	0.30	1.03	0.31	1.07	0.31	1.07	0.29	1.00	0.29	1.00
0.250	0.33	1.11	0.32	1.08	0.30	1.01	0.31	1.04	0.31	1.04	0.29	0.98	0.29	0.98
0.244	0.33	1.08	0.32	1.05	0.30	0.98	0.31	1.02	0.31	1.02	0.30	0.98	0.30	0.98
0.238	0.33	1.06	0.32	1.02	0.29	0.93	0.31	0.99	0.30	0.96	0.29	0.93	0.31	0.99
0.233	0.34	1.06	0.31	0.97	0.30	0.94	0.33	1.03	0.31	0.97	0.30	0.94	0.33	1.03
0.227	0.31	0.95	0.31	0.95	0.32	0.98	0.36	1.10	0.33	1.01	0.33	1.01	0.36	1.10

Temperature (1/H)x10^3	1.3°K V	1.3°K R	1.82°K V	1.82°K R	2.21°K V	2.21°K R	2.58°K V	2.58°K R	3.15°K V	3.15°K R	3.71°K V	3.71°K R	4.2°K V	4.2°K R
0.222	0.34	1.01	0.34	1.01	0.35	1.04	0.40	1.19	0.37	1.10	0.37	1.10	0.39	1.16
0.217	0.39	1.14	0.40	1.17	0.40	1.17	0.44	1.28	0.41	1.20	0.41	1.20	0.42	1.23
0.213	0.43	1.23	0.45	1.29	0.45	1.29	0.48	1.37	0.44	1.26	0.44	1.26	0.45	1.29
0.208	0.47	1.32	0.50	1.40	0.49	1.37	0.50	1.40	0.48	1.34	0.47	1.32	0.47	1.32
0.204	0.51	1.40	0.53	1.45	0.53	1.45	0.53	1.45	0.51	1.40	0.49	1.34	0.49	1.34
0.200	0.54	1.45	0.56	1.51	0.55	1.48	0.54	1.45	0.53	1.42	0.51	1.37	0.51	1.37
0.196	0.57	1.50	0.59	1.55	0.56	1.47	0.55	1.45	0.55	1.45	0.53	1.40	0.52	1.37
0.192	0.60	1.55	0.60	1.55	0.57	1.47	0.57	1.42	0.56	1.45	0.54	1.39	0.53	1.37
0.189	0.61	1.55	0.61	1.55	0.58	1.49	0.58	1.47	0.57	1.45	0.55	1.39	0.54	1.37
0.185	0.62	1.54	0.61	1.52	0.59	1.47	0.59	1.47	0.57	1.42	0.55	1.37	0.54	1.34
0.182	0.62	1.51	0.61	1.49	0.59	1.44	0.59	1.44	0.57	1.39	0.55	1.34	0.55	1.34
0.179	0.61	1.46	0.60	1.44	0.59	1.41	0.59	1.41	0.57	1.37	0.55	1.32	0.55	1.32
0.175	0.60	1.41	0.59	1.39	0.59	1.39	0.59	1.39	0.51	1.34	0.55	1.30	0.56	1.32
0.172	0.59	1.37	0.58	1.34	0.59	1.37	0.59	1.37	0.59	1.37	0.56	1.29	0.57	1.32
0.170	0.59	1.34	0.59	1.34	0.59	1.34	0.60	1.37	0.60	1.37	0.58	1.32	0.59	1.34
0.167	0.62	1.39	0.62	1.39	0.60	1.34	0.61	1.37	0.61	1.37	0.59	1.32	0.60	1.34
0.164	0.65	1.43	0.64	1.41	0.63	1.39	0.62	1.37	0.63	1.39	0.61	1.34	0.61	1.34

Temperature (1/H)x10^3	1.3^{o}K V	1.3^{o}K R	1.82^{o}K V	1.82^{o}K R	2.21^{o}K V	2.21^{o}K R	2.58^{o}K V	2.58^{o}K R	3.15^{o}K V	3.15^{o}K R	3.71^{o}K V	3.71^{o}K R	4.2^{o}K V	4.2^{o}K R
0.161	0.65	1.41	0.65	1.41	0.65	1.41	0.63	1.36	0.64	1.39	0.63	1.86	0.63	1.06
0.159	0.66	1.41	0.65	1.36	0.66	1.41	0.65	1.39	0.66	1.41	0.66	1.41	0.66	1.41
0.156	0.66	1.38	0.67	1.41	0.67	1.41	0.69	1.45	0.69	1.45	0.69	1.45	0.70	1.47
0.154	0.69	1.43	0.70	1.45	0.71	1.47	0.70	1.45	0.72	1.49	0.71	1.47	0.74	1.53
0.152	0.73	1.49	0.75	1.53	0.74	1.51	0.74	1.51	0.76	1.55	0.79	1.61	0.81	1.65
0.149	0.79	1.58	0.83	1.66	0.81	1.62	0.80	1.60	0.74	1.68	0.85	1.70	0.87	1.74
0.147	0.88	1.74	0.93	1.83	0.91	1.80	0.90	1.78	0.93	1.84	0.91	1.80	0.93	1.84
0.145	1.00	1.95	1.03	2.00	1.01	1.97	1.01	1.97	1.00	1.95	0.98	1.91	1.00	1.95
0.143	1.10	2.11	1.11	2.13	1.09	2.09	1.08	2.07	1.06	2.03	1.04	2.00	1.05	2.01
0.141	1.17	2.21	1.17	2.21	1.16	2.20	1.15	2.18	1.12	2.12	1.11	2.10	1.09	2.06
0.139	1.22	2.28	1.22	2.28	1.21	2.26	1.19	2.22	1.17	2.18	1.15	2.14	1.13	2.11
0.137	1.27	2.34	1.25	2.30	1.21	2.23	1.23	2.26	1.21	2.23	1.19	2.19	1.16	2.14
0.135	1.30	2.36	1.29	2.36	1.27	2.31	1.25	2.27	1.24	2.25	1.23	2.24	1.19	2.16
0.133	1.33	2.38	1.33	2.38	1.30	2.33	1.27	2.27	1.27	2.27	1.25	2.24	1.21	2.17
0.132	1.36	2.39	1.36	2.39	1.33	2.34	1.29	2.27	1.29	2.27	1.27	2.24	1.24	2.18
0.130	1.40	2.44	1.39	2.42	1.35	2.35	1.31	2.28	1.31	2.28	1.28	2.23	1.26	2.20
0.128	1.43	2.46	1.42	2.44	1.36	2.34	1.33	2.29	1.32	2.27	1.29	2.22	1.27	2.19

Temperature (1/H)x10^3	1.3°K		1.82°K		2.21°K		2.58°K		3.15°K		3.71°K		4.2°K	
	V	R	V	R	V	R	V	R	V	R	V	R	V	R
0.127	1.45	2.47	1.44	2.46	1.37	2.33	1.35	2.30	1.33	2.26	1.29	2.19	1.28	2.18
0.125	1.45	2.44	1.44	2.42	1.37	2.30	1.36	2.28	1.33	2.24	1.30	2.18	1.28	2.15
0.123	1.45	2.40	1.44	2.39	1.37	2.27	1.37	2.27	1.33	2.21	1.30	2.16	1.28	2.12
0.122	1.45	2.38	1.41	2.31	1.37	2.25	1.36	2.23	1.33	2.18	1.30	2.13	1.28	2.10
0.121	1.42	2.30	1.38	2.24	1.35	2.19	1.35	2.19	1.32	2.14	1.30	2.11	1.28	2.07
0.119	1.38	2.21	1.34	2.14	1.33	2.13	1.33	2.13	1.31	2.10	1.30	2.08	1.29	2.06
0.118	1.34	2.12	1.31	2.07	1.31	2.07	1.31	2.07	1.31	2.07	1.30	2.06	1.30	2.06
0.116	1.31	2.05	1.30	2.03	1.30	2.03	1.31	2.05	1.31	2.05	1.31	2.05	1.31	2.05
0.115	1.29	1.99	1.29	1.99	1.31	2.02	1.33	2.05	1.33	2.05	1.32	2.04	1.35	2.08
0.114	1.29	1.97	1.30	1.49	1.33	2.03	1.36	2.03	1.36	2.08	1.35	2.06	1.39	2.12
0.112	1.31	1.98	1.34	2.02	1.38	2.08	1.41	2.13	1.41	2.13	1.39	2.10	1.43	2.16
0.111	1.36	2.03	1.41	2.11	1.44	2.15	1.46	2.18	1.47	2.20	1.45	2.16	1.49	2.22
0.110	1.47	2.17	1.49	2.20	1.52	2.24	1.54	2.28	1.54	2.28	1.52	2.24	1.57	2.32
0.109	1.52	2.22	1.60	2.34	1.61	2.39	1.62	2.37	1.63	2.38	1.60	2.34	1.65	2.41
0.108	1.76	2.54	1.74	2.52	1.73	2.50	1.72	2.49	1.73	2.50	1.69	2.44	1.74	2.52
0.106	1.90	2.72	1.88	2.69	1.84	2.63	1.83	2.62	1.84	2.63	1.79	2.56	1.83	2.62
0.105	2.02	2.86	2.02	2.86	1.96	2.77	1.95	2.76	1.94	2.74	1.88	2.66	1.92	2.72

Temperature (1/H)x10^3	1.3°K		1.82°K		2.21°K		2.58°K		3.15°K		3.71°K		4.2°K	
	V	R	V	R	V	R	V	R	V	R	V	R	V	R
0.104	2.15	3.00	2.14	2.98	2.07	2.88	2.06	2.87	2.05	2.86	1.98	2.76	2.00	2.78
0.103	2.27	3.15	2.25	3.12	2.19	3.04	2.17	3.01	2.16	2.99	2.07	2.87	2.09	2.90
0.102	2.36	3.21	2.34	3.21	2.28	3.13	2.26	3.10	2.24	3.07	2.15	2.95	2.15	2.95
0.101	2.45	3.33	2.42	3.29	2.37	3.22	2.34	3.18	2.30	3.12	2.23	3.03	2.22	3.02
0.100	2.52	3.38	2.49	3.34	2.43	3.26	2.41	3.24	2.36	3.17	2.29	3.08	2.27	3.05
0.099	2.58	3.43	2.54	3.38	2.48	3.30	2.47	3.29	2.41	3.21	2.34	3.11	2.31	3.08
0.098	2.62	3.42	2.58	3.40	2.52	3.32	2.52	3.32	2.45	3.23	2.38	3.13	2.35	3.10
0.097	2.66	3.47	2.61	3.40	2.56	3.34	2.55	3.33	2.49	3.25	2.42	3.16	2.39	3.12
0.096	2.68	3.42	2.63	3.40	2.59	3.35	2.58	3.33	2.52	3.26	2.45	3.17	2.41	3.11
0.095	2.69	3.44	2.64	3.38	2.61	3.34	2.59	3.31	2.53	3.24	2.47	3.16	2.43	3.11
0.094	2.70	3.42	2.65	3.33	2.63	3.32	2.61	3.31	2.55	3.23	2.49	3.16	2.44	3.09
0.093	2.69	3.37	2.65	3.30	2.63	3.27	2.60	3.24	2.57	3.20	2.50	3.11	2.45	3.05
0.092	2.68	3.30	2.64	3.26	2.62	3.23	2.69	3.32	2.56	3.16	2.50	3.08	2.45	3.02
0.091	2.67	3.26	2.63	3.21	2.61	3.19	2.58	3.15	2.56	3.12	2.50	3.05	2.45	2.99
0.090	2.66	3.22	2.62	3.17	2.60	3.15	2.57	3.11	2.55	3.09	2.49	3.01	2.45	2.97
0.089	2.65	3.18	2.61	3.13	2.58	3.10	2.55	3.06	2.54	3.06	2.48	2.95	2.44	2.93
0.088	2.61	3.08	2.58	3.04	2.53	2.98	2.51	2.96	2.99	2.94	2.45	2.89	2.41	2.84

Temperature (1/H)x103	1.3°K		1.82°K		2.21°K		2.58°K		3.15°K		3.71°K		4.2°K	
	V	R	V	R	V	R	V	R	V	R	V	R	V	R
0.087	2.58	3.02	2.55	2.98	2.50	2.92	2.47	2.89	2.47	2.89	2.43	2.84	2.40	2.80
0.086	2.54	2.94	2.51	2.91	2.45	2.89	2.43	2.81	2.43	2.81	2.41	2.79	2.38	2.76
0.085	2.43	2.77	2.41	2.75	2.37	2.70	2.36	2.64	2.36	2.69	2.35	2.68	2.35	2.68
0.084	2.35	2.65	2.35	2.65	2.32	2.62	2.31	2.61	2.33	2.63	2.32	2.62	2.33	2.63
0.083	2.27	2.54	2.30	2.58	2.27	2.54	2.28	2.55	2.30	2.58	2.30	2.58	2.31	2.59
0.082	2.16	2.38	2.21	2.43	2.21	2.43	2.24	2.46	2.24	2.46	2.27	2.50	2.27	2.50
0.081	2.17	2.37	2.21	2.41	2.20	2.40	2.23	2.44	2.23	2.44	2.26	2.47	2.27	2.48
0.080	2.26	2.43	2.27	2.44	2.24	2.41	2.26	2.43	2.25	2.42	2.28	2.45	2.29	2.48
0.079	2.31	2.46	2.31	2.47	2.27	2.42	2.29	2.44	2.28	2.43	2.29	2.44	2.31	2.47
0.078	2.36	2.48	2.35	2.47	2.32	2.49	2.35	2.47	2.35	2.47	2.35	2.47	2.37	2.49
0.077	2.30	2.38	2.33	2.41	2.34	2.42	2.39	2.47	2.41	2.49	2.43	2.51	2.46	2.54
0.076	2.25	2.31	2.34	2.40	2.35	2.41	2.43	2.49	2.46	2.52	2.50	2.56	2.52	2.58
0.075	2.45	2.48	2.49	2.51	2.53	2.56	2.59	2.62	2.64	2.67	2.68	2.71	2.68	2.71
0.074	2.70	2.71	2.66	2.67	2.68	2.69	2.72	2.73	2.78	2.79	2.80	2.81	2.78	2.79

AUTOBIOGRAPHY

Theodore Edward Leinhardt was born September 5, 1921, in Gretna, Louisiana. He attended public schools in this town, graduating from Gretna High School in 1938. After serving four years in the United States Army Signal Corps, he enrolled in the School of Engineering at Louisiana Polytechnic Institute in 1946. He received the Bachelor of Science degree in Physics from this institute in 1950. Then he entered the Graduate School of Louisiana State University and received the Master of Science degree in Physics in 1952. At the present he is a candidate for the degree of Doctor of Philosophy in the Department of Physics.

EXAMINATION AND THESIS REPORT

Candidate: Theodore Edward Leinhardt

Major Field: Physics

Title of Thesis: The Hall Effect in Bismuth at High Magnetic Fields and Low Temperatures

Approved:

J. M. Reynolds Jr.
Major Professor and Chairman

Richard J. Russell
Dean of the Graduate School

EXAMINING COMMITTEE:

Vincent E. Parker

Max Goodrich

E Scheibman

Richard C. Keen

Date of Examination: July 16, 1956